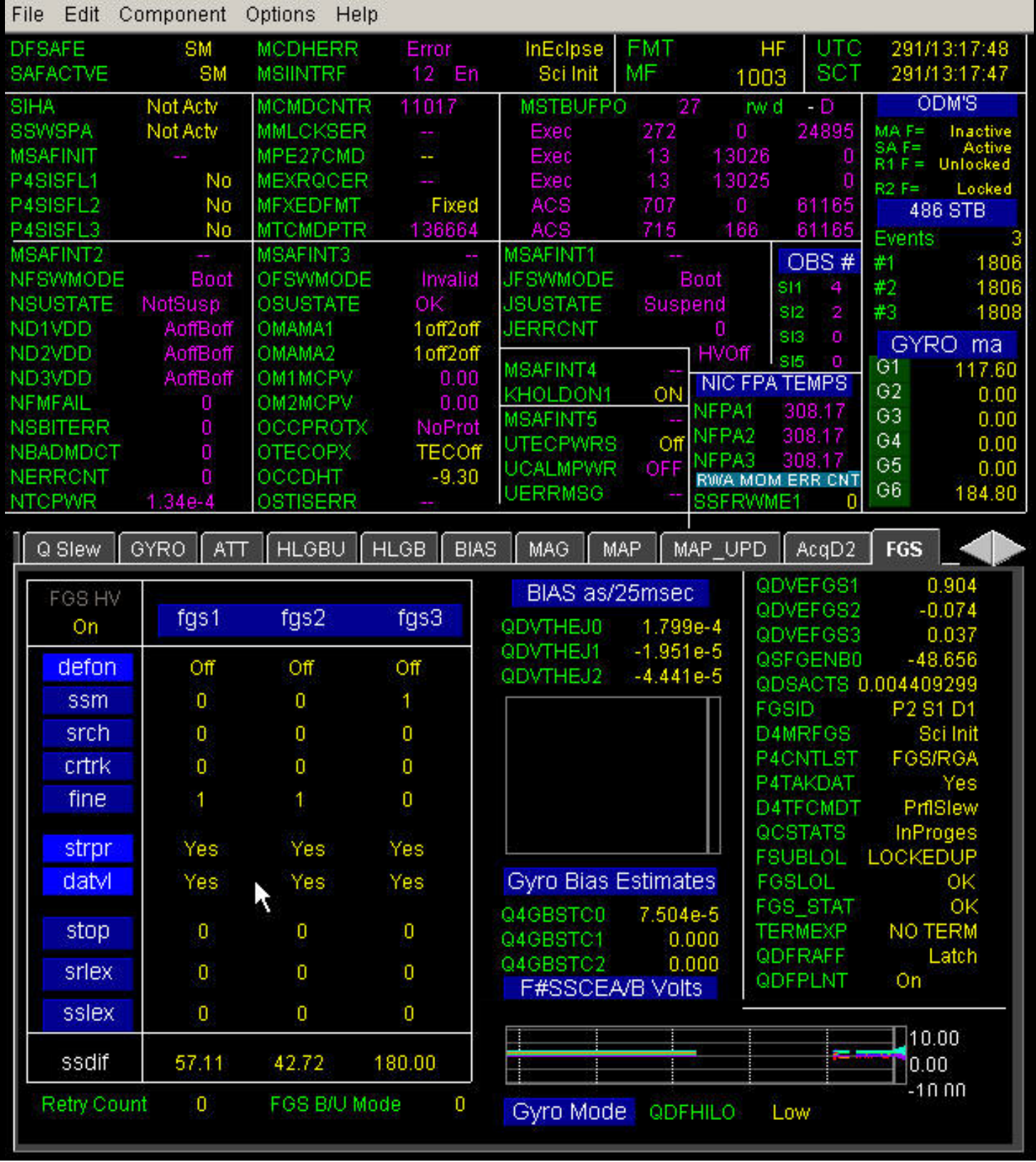

File Edit Component Options Help
DFSAFE SM
SAFACTVE SM
MCDHERR Error
MSIINTRF 12 En
InEclpse
Sci Init
FMT HF
MF 1003
UTC 291/13:17:48
SCT 291/13:17:47
SIHA Not Actv
SSWSPA Not Actv
MSAFINIT --
P4SISFL1 No
P4SISFL2 No
P4SISFL3 No
MCMDCNTR 11017
MMLCKSER --
MPE27CMD --
MEXRQCER --
MFXEDFMT Fixed
MTCMDPTR 136664
MSTBUFPO 27 rw d - D
Exec 272 0 24895
Exec 13 13026 0
Exec 13 13025 0
ACS 707 0 61165
ACS 715 166 61165
ODM'S
MA F= Inactive
SA F= Active
R1 F = Unlocked
R2 F= Locked
486 STB
Events 3
#1 1806
#2 1806
#3 1808
MSAFINT2 --
NFSWMODE Boot
NSUSTATE NotSusp
ND1VDD AoffBoff
ND2VDD AoffBoff
ND3VDD AoffBoff
NFMFAIL 0
NSBITERR 0
NBADMDCT 0
NERRCNT 0
NTCPWR 1.34e-4
MSAFINT3 --
OFSWMODE Invalid
OSUSTATE OK
OMAMA1 1off2off
OMAMA2 1off2off
OM1MCPV 0.00
OM2MCPV 0.00
OCCPROTX NoProt
OTECOPX TECOff
OCCDHT -9.30
OSTISERR --
MSAFINT1 --
JFSWMODE Boot
JSUSTATE Suspend
JERRCNT 0
HVOff
OBS #
SI1 4
SI2 2
SI3 0
SI5 0
MSAFINT4 --
KHOLDON1 ON
MSAFINT5 --
UTECPWRS Off
UCALMPWR OFF
UERRMSG --
NIC FPA TEMPS
NFPA1 308.17
NFPA2 308.17
NFPA3 308.17
RWA MOM ERR CNT
SSFRWME1 0
GYRO ma
G1 117.60
G2 0.00
G3 0.00
G4 0.00
G5 0.00
G6 184.80
Q Slew
GYRO
ATT
HLGBU
HLGB
BIAS
MAG
MAP
MAP_UPD
AcqD2
FGS
FGS HV On
fgs1 fgs2 fgs3
defon Off Off Off
ssm 0 0 1
srch 0 0 0
crtrk 0 0 0
fine 1 1 0
strpr Yes Yes Yes
datvl Yes Yes Yes
stop 0 0 0
srlex 0 0 0
sslex 0 0 0
ssdif 57.11 42.72 180.00
Retry Count 0
FGS B/U Mode 0
BIAS as/25msec
QDVTHEJ0 1.799e-4
QDVTHEJ1 -1.951e-5
QDVTHEJ2 -4.441e-5
Gyro Bias Estimates
Q4GBSTC0 7.504e-5
Q4GBSTC1 0.000
Q4GBSTC2 0.000
F#SSCEA/B Volts
10.00
0.00
-10.00
Gyro Mode QDFHILO Low
QDVEFGS1 0.904
QDVEFGS2 -0.074
QDVEFGS3 0.037
QSFGENB0 -48.656
QDSACTS 0.004409299
FGSID P2 S1 D1
D4MRFGS Sci Init
P4CNTLST FGS/RGA
P4TAKDAT Yes
D4TFCMDT PrflSlew
QCSTATS InProges
FSUBLOL LOCKEDUP
FGSLOL OK
FGS_STAT OK
TERMEXP NO TERM
QDFRAFF Latch
QDFPLNT On

OPERATIONAL ANOMALY REPORT

To Be Completed By User or Flight Operations Team (FOT)

(Read Only)

Mission:	**HST**	**Status:**	Open
Discrepancy #:	11511	**Date of Entry:**	09/27/2008
		GMT of Anomaly:	8/272/0:10:41
Originator:	Dan Schultz	**Mnemonics:**	SCDHSAFA, SDSTOGF, SSiCDHT, SSIPTBE
Anomaly Type:	Spacecraft	**Recommended Priority:**	Routine
Anomaly Title:	NSSC-1 is safed, PIT toggle test failed		

Discrepancy Description:

(From Dan Schultz 9/27/08 10:11 PM)

Upon acqusition of signal at 272/00:52:19 vehicle telemetry was in HF format with NSSC-1 in fixed format. Two 486 ESB messages "D24" (SICDH_TOGGLE_TEST_FAIL) and "D01" (SAFE_HLD_MACROS_ACTIVE_INFO) were received at 00:10:41 according to ESB dump. SCDHSAFA (Safing Macro Active), SDSTOGF (Toggle Failure Counter), SSiCDHT (SIC&DH Toggle OK Flag), and SSIPTBE (PIT Togggle Test) flags were set.

(From Rosalie Consiglio 9/29/08 02:21 AM)

Note: SSFRPTR, the fault record pointer, is also flagging out of limits at a value of 1.

Software Configuration (Read Only)

PDB:	O06700/O067003	**CCS - String A:**	4.0.3.1.6
CCS - String C:	4.0.3.1.6	**SUN - String D:**	5.4.3.1.6
CCS - String E:	4.0.30.17 (O6100)	**SUN - String F:**	5.4.3.1.6
CCS - Sim String:		**SUN - String H:**	5.4.3.1.6
Database:			

Assignment Section (Read Only) (Completed By Supervisor)

Assignment Status:	Assigned	**Assigned Priority:**	Routine
Subsystem:	SI		
Assign to:	Scott Swain	**cc:**	
Assignment Date:	09/30/2008	**Due Date:**	12/29/2008

Alert Message:

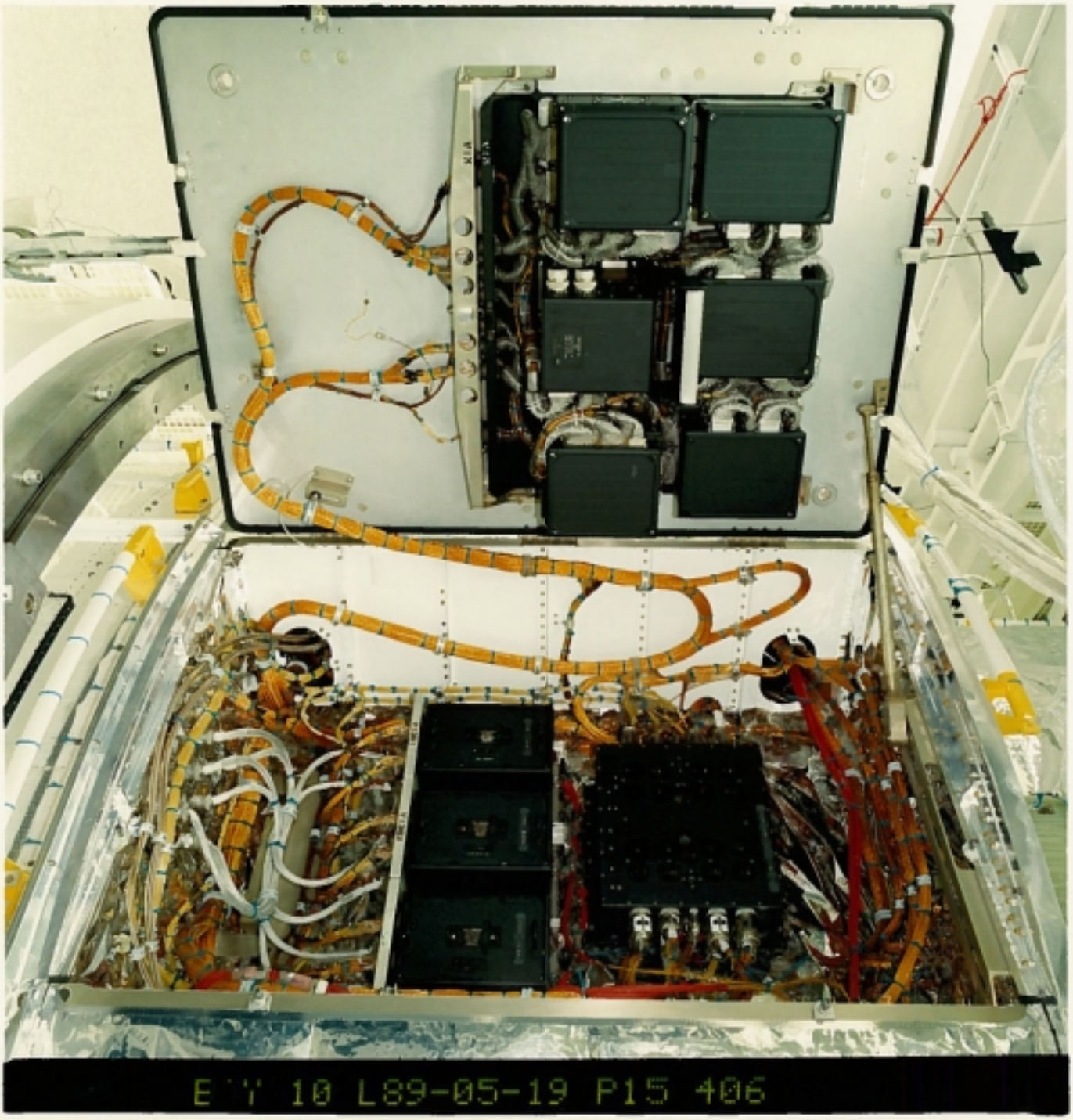
You have been assigned responsibility for this anomaly.

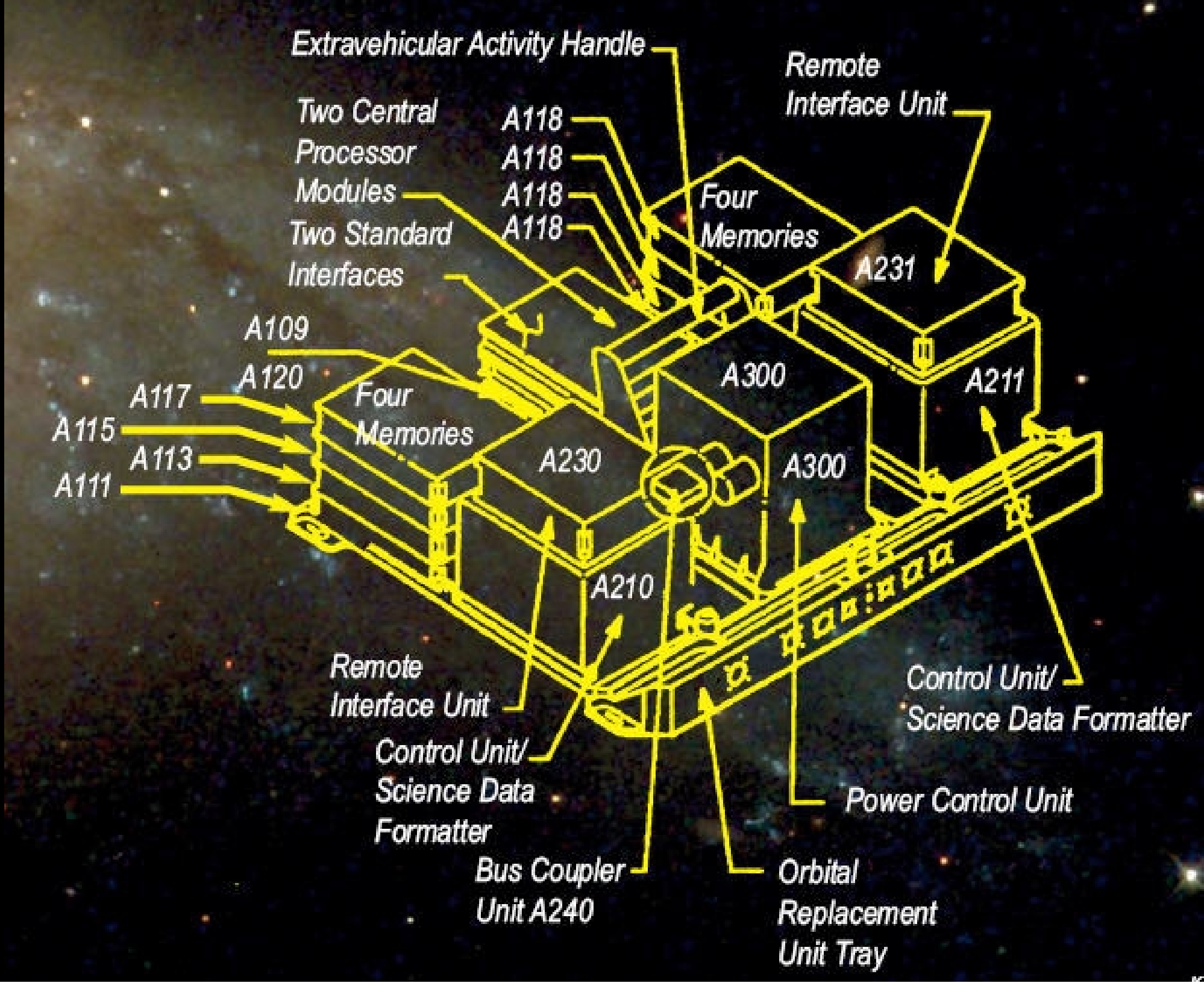
Comments:

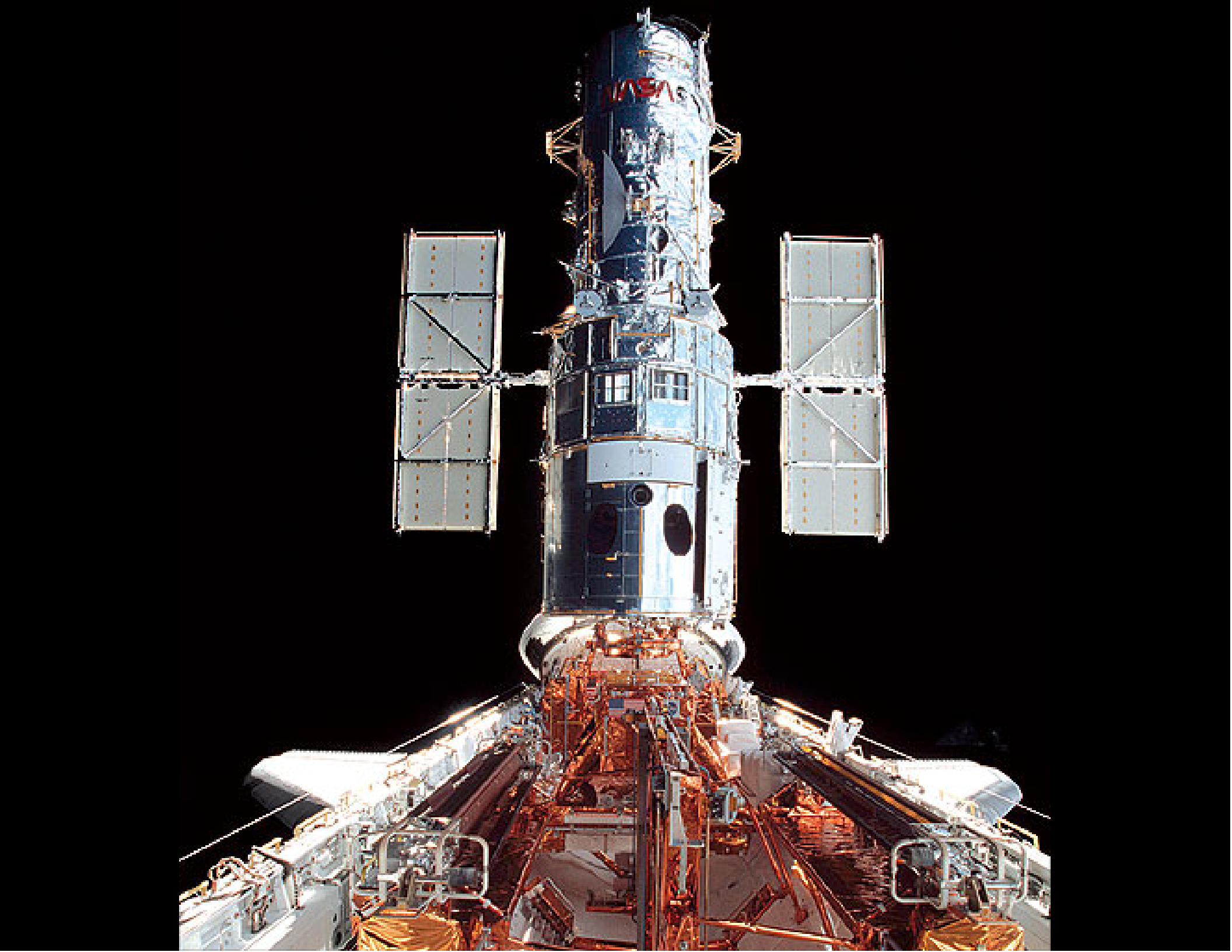
None

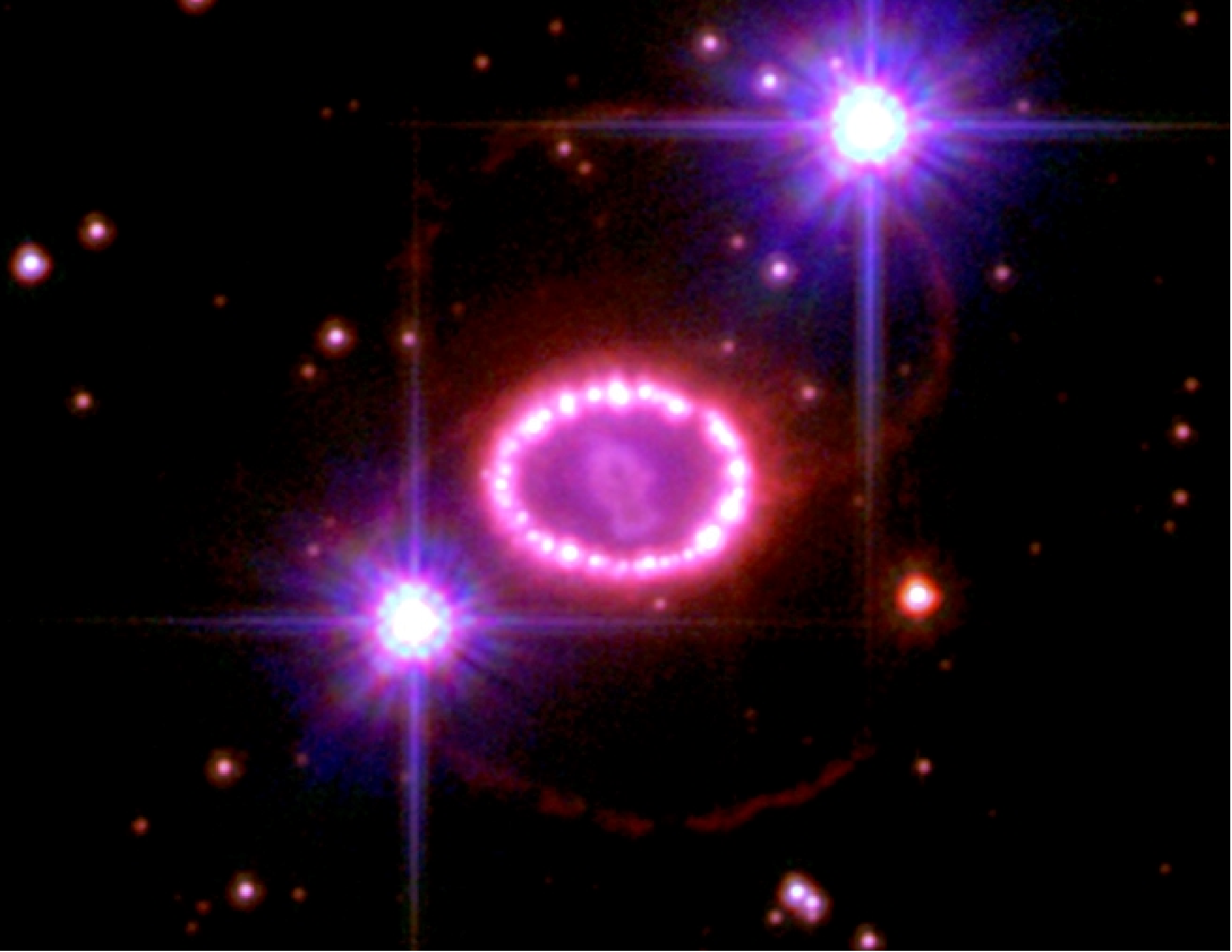
Request Board Action (Read Only) (Completed By The Assignee) ACTION RO

Action Requested:		**Request Date:**	
		Suggested Subsystem:	
Categories:		**Assigned Release:**	

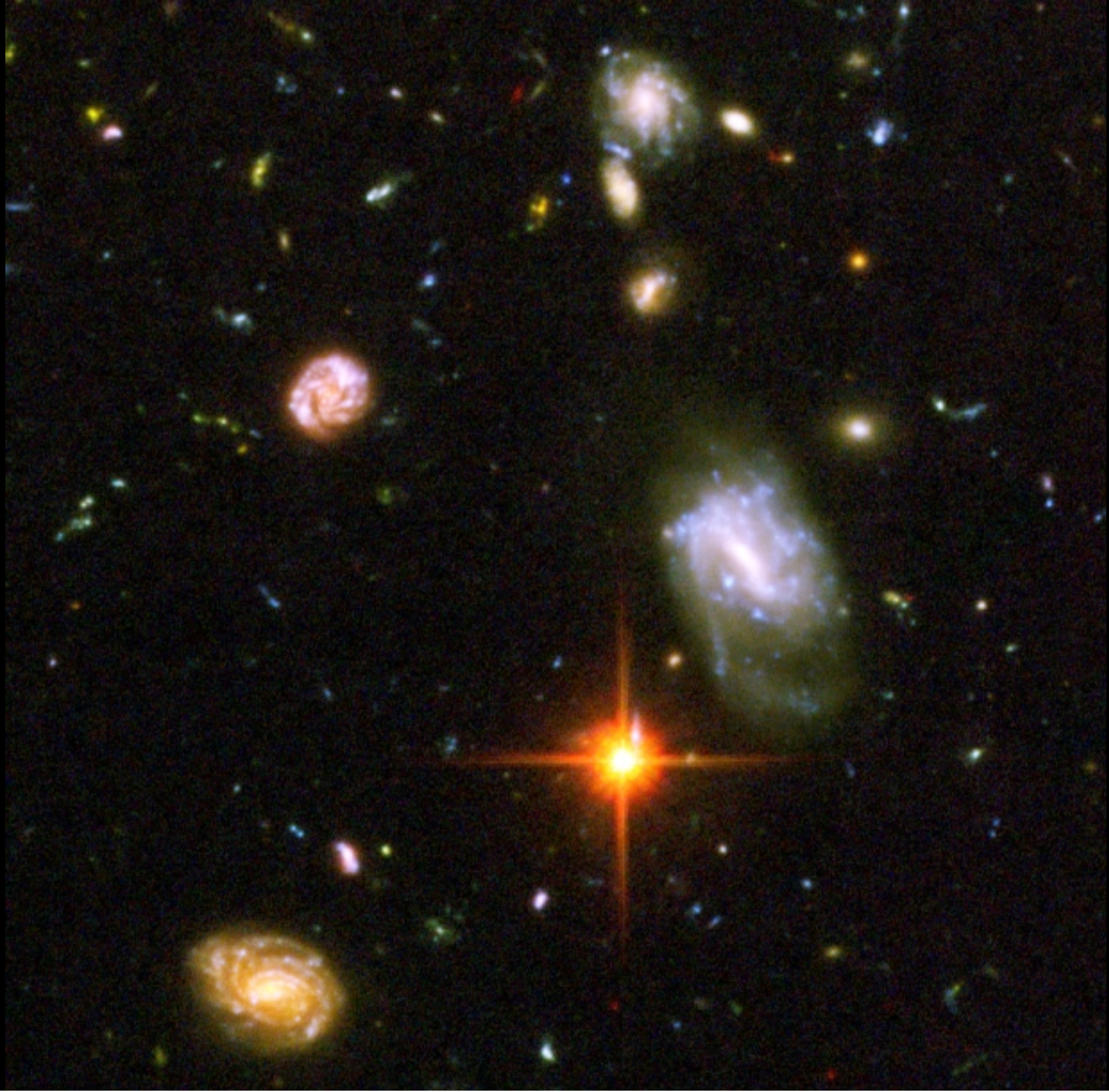

E Y 10 L89-05-19 P15 406

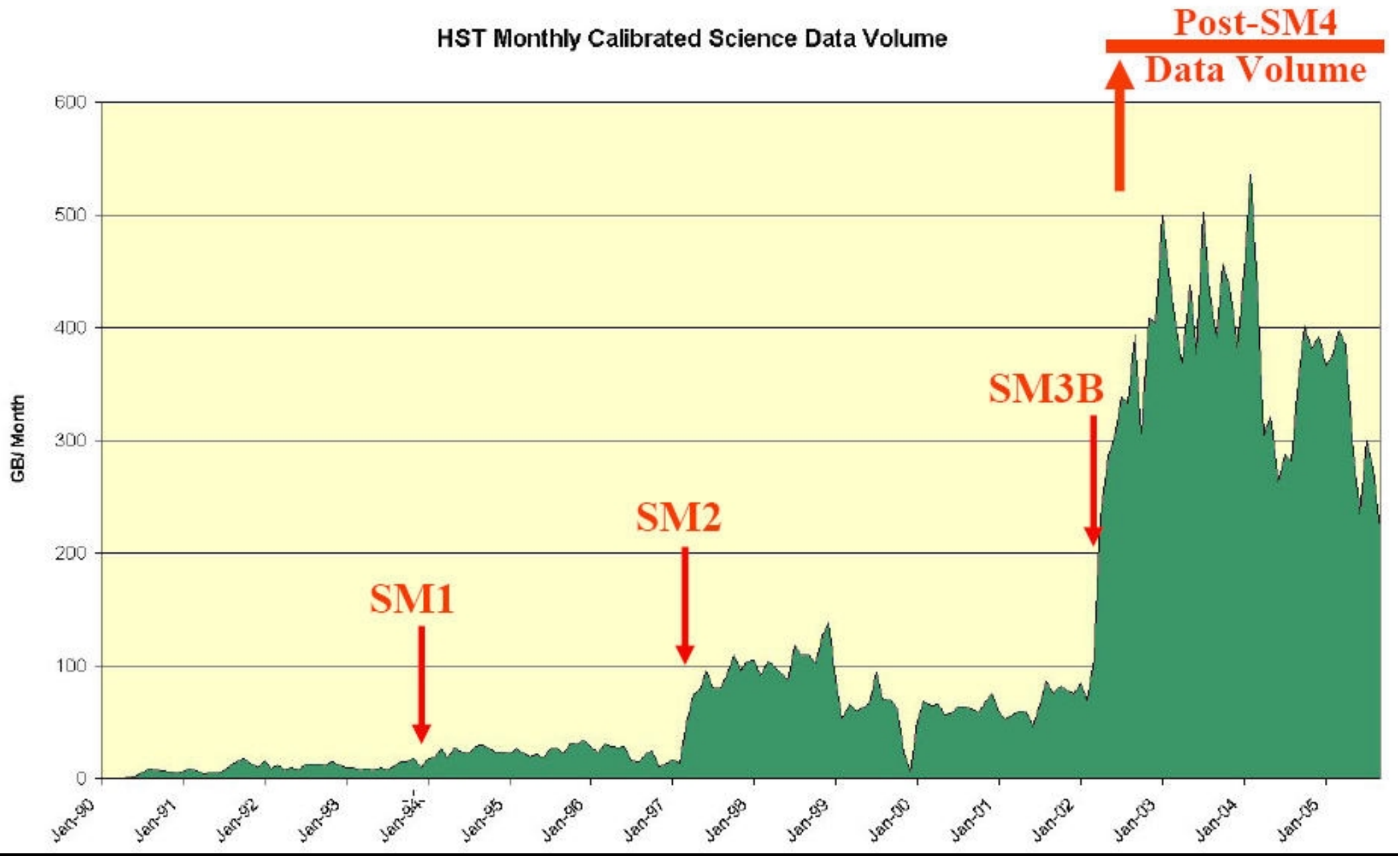

Extravehicular Activity Handle
Two Central Processor Modules
Two Standard Interfaces
A118
A118
A118
A118
Remote Interface Unit
Four Memories
A231
A109
A120
A117
A115
A113
A111
Four Memories
A300
A211
A230
A300
A210
Remote Interface Unit
Control Unit/ Science Data Formatter
Control Unit/ Science Data Formatter
Power Control Unit
Bus Coupler Unit A240
Orbital Replacement Unit Tray


NASA

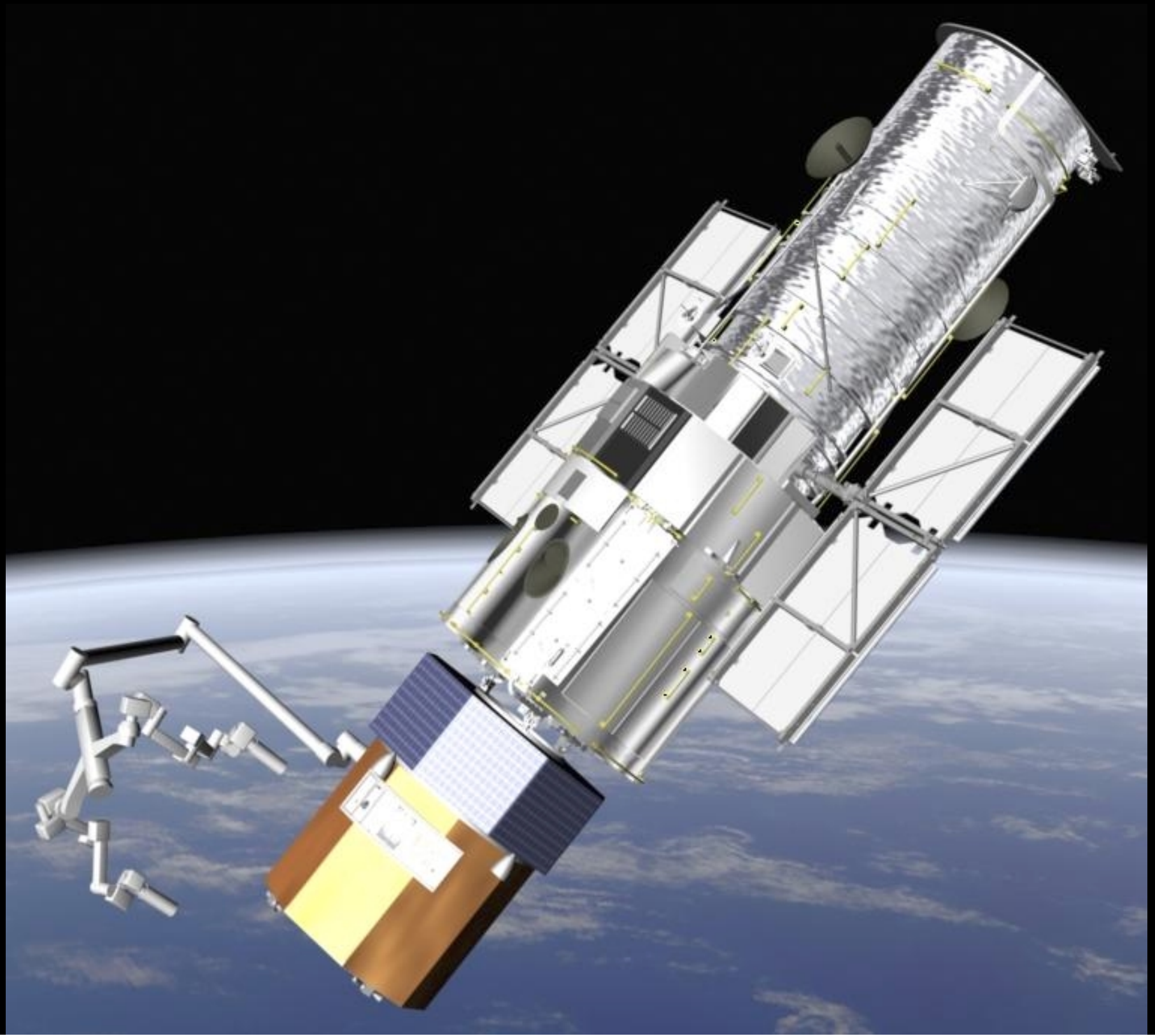


The Hubble telescope captured a display of starlight, glowing gas, and silhouetted dark clouds of interstellar dust in this 4-foot-by-8-foot image of the barred spiral galaxy NGC 1300.




HST Monthly Calibrated Science Data Volume
Post-SM4
Data Volume
SM3B
SM2
SM1
GB/ Month
600
500
400
300
200
100
0
Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05

BREAKING NEWS
WFAA
CNN
SHUTTLE FOLLOWED BY MULTIPLE
VAPOR TRAILS OVER TEXAS
ORTH CENTRAL TEXAS AFTER CONTACT WITH SPACE SHUTTLE



ALTMAN • JOHNSON • MASSIMINO • GOOD • McARTHUR • FEUSTEL • GRUNSFELD
125

National Aeronautics and Space Administration

DREW **FEUSTEL** | MEGAN **McARTHUR** | GREG **JOHNSON** | SCOTT **ALTMAN** | MIKE **MASSIMINO** | MIKE **GOOD** | JOHN MACE **GRUNSFELD**

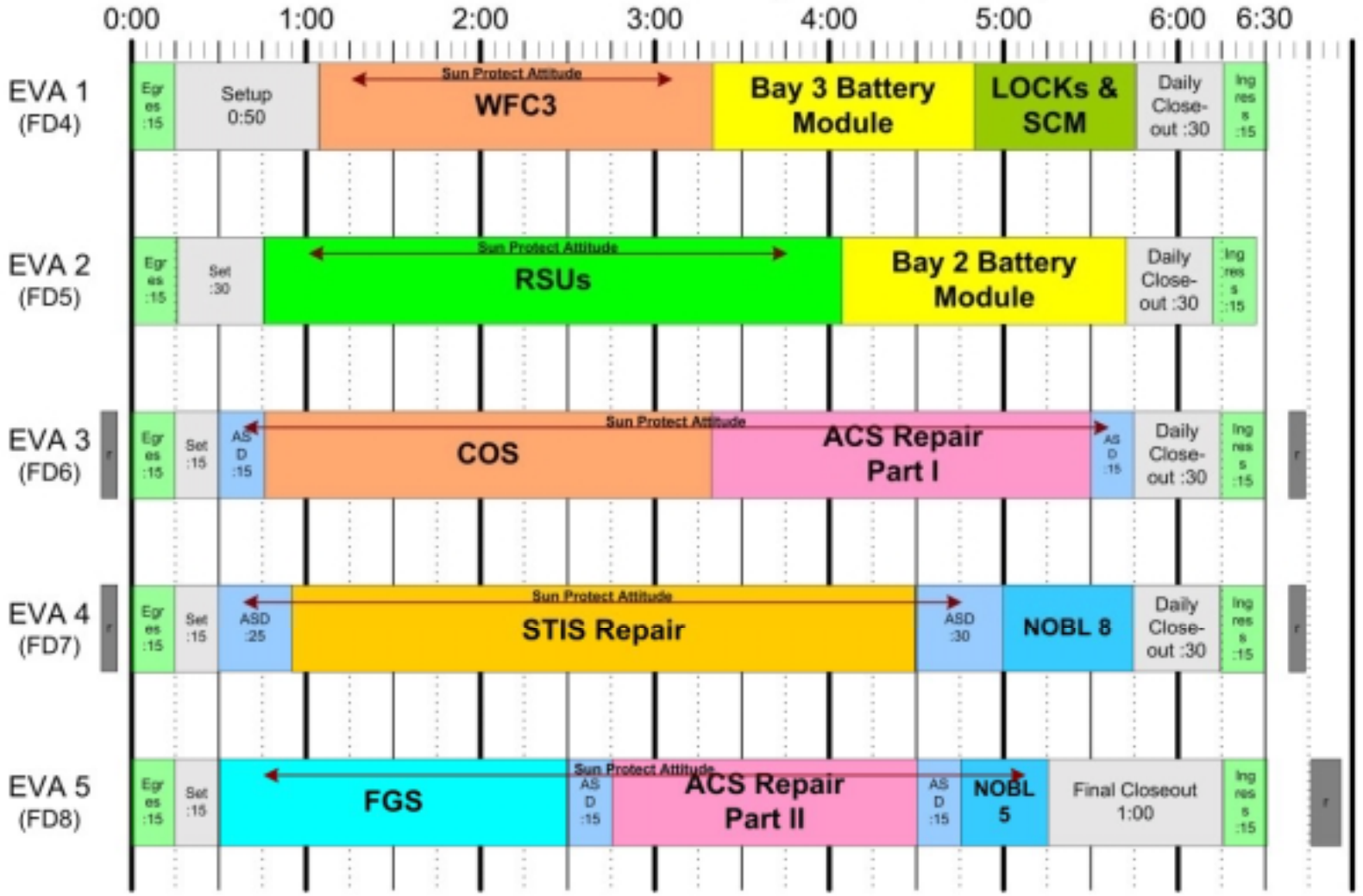
ATLANTIS 125

www.nasa.gov

NW-2008-003A-JSC

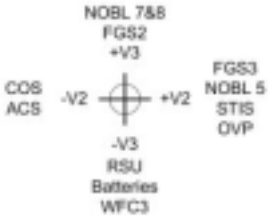
EVA Timeline as of August 20, 2008

(8/20/08 e-mail from JSC)



Priority	Task Times
1. RSUs (3)	3:20
2. WFC3	2:15
3. COS	2:35
4. Bay 3 Battery Mod.	1:30
Bay 2 Battery Mod.	1:35
5. FGS 2	2:00
6. STIS Repair	3:35
7. ACS - part I	2:10
- part II	1:45
8. NOBL 8	0:45
NOBL 5	0:30*
9. NOBL 7	
10. SCM	0:15
11. Reboost	

* Time for NOBL 5 is an estimate until completion of NBL runs



5/80/08 Notes:
1. At the end of ACS Part I, two cards have been removed.
2. Aft shroud door open/close for -V2 doors is shorter than the other doors due to LOCKs being installed.
3. An additional 55-60 min will be required to complete ACS during EVA 3, without LOCKs installed.

Note: LOCKs (the Latch Over Center Kit) are replacement door latches to be installed to reduce the time it takes to open and close the -V2 aft shroud doors.

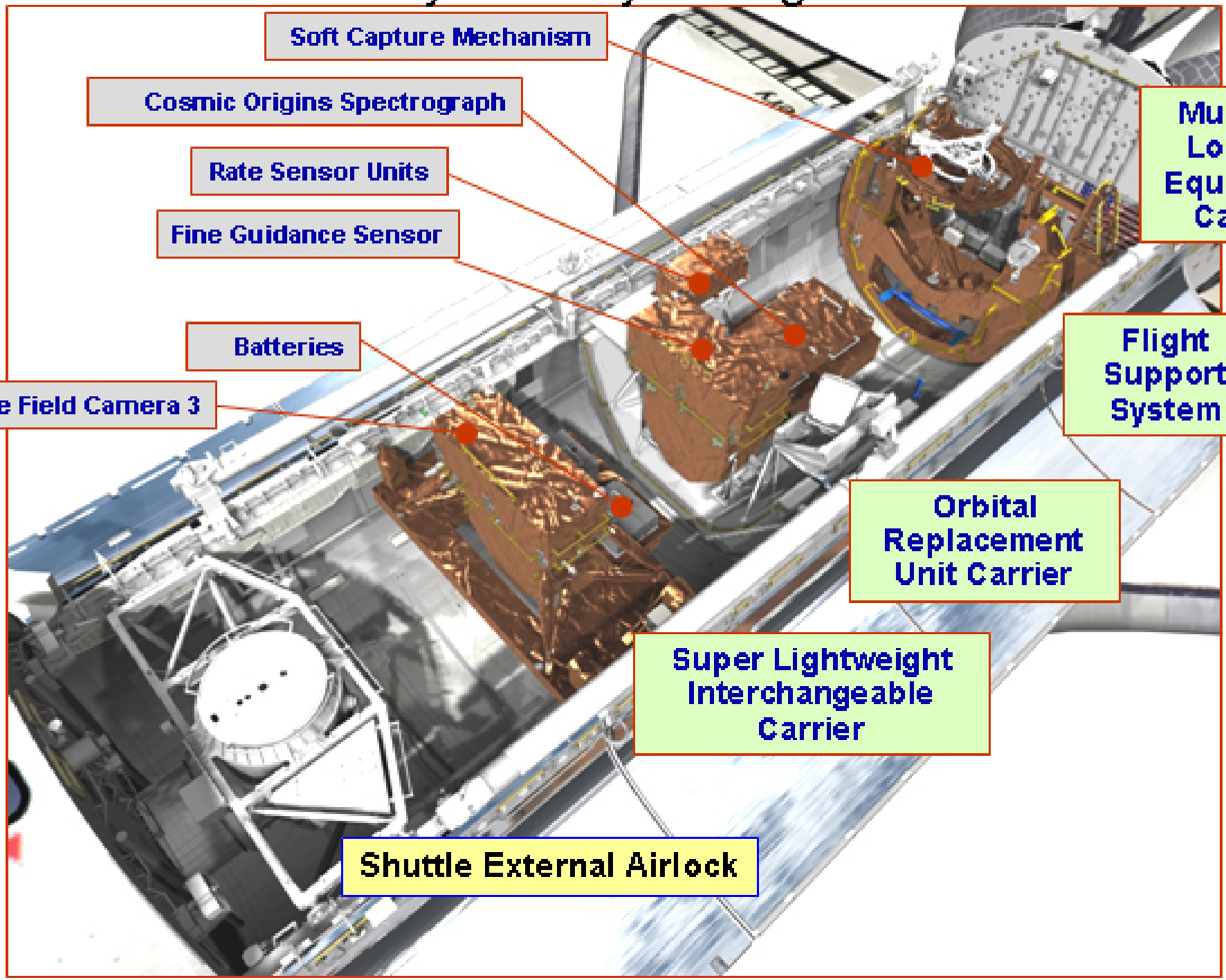
Note:

Sun Protect Attitude

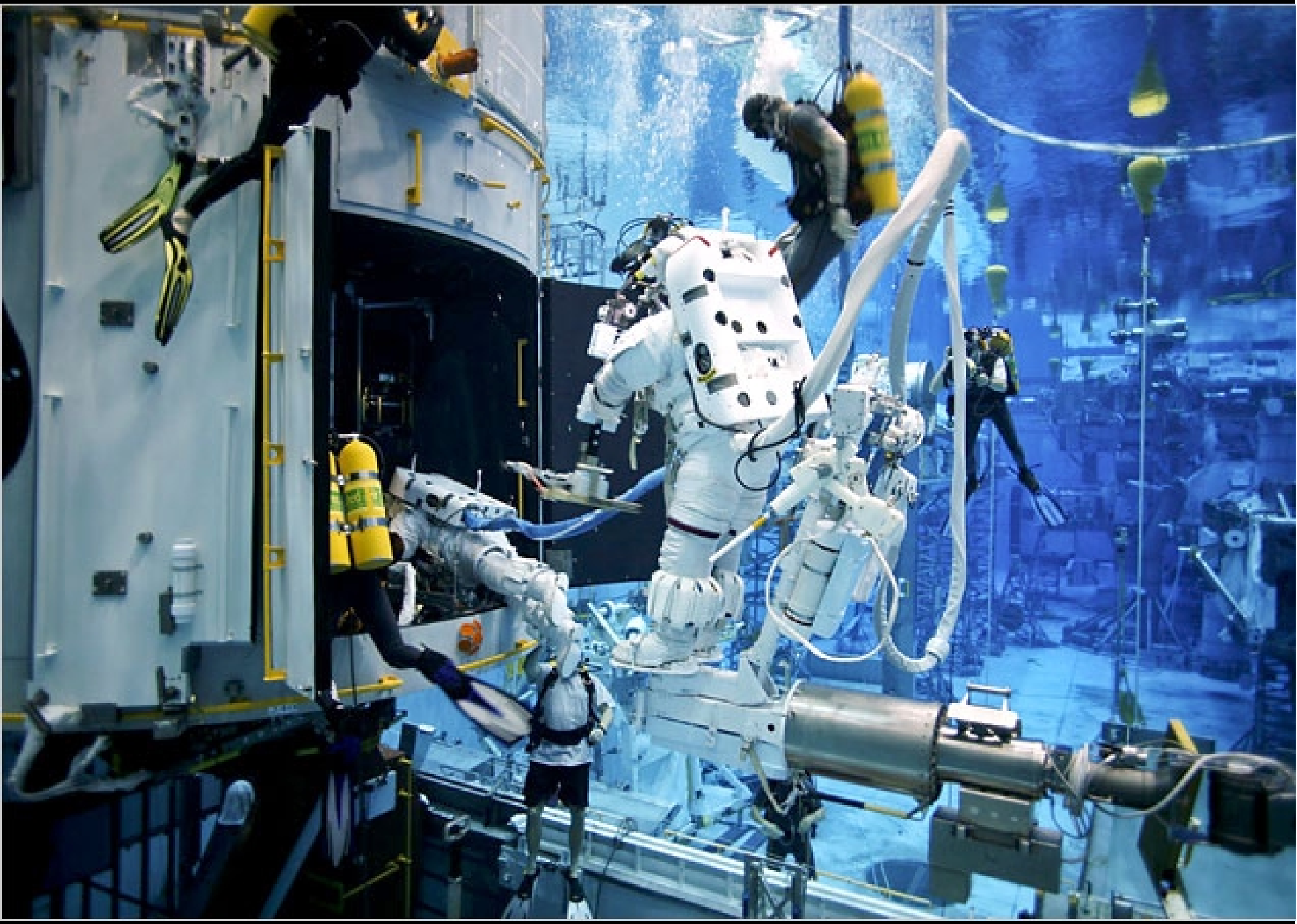
indicates a sun protect attitude is required from start of opening aft shroud door to closing of aft shroud door. The length of the arrow is not to scale of task time between door opening and closing

8/21/08; 8:36 AM -- BGK/442

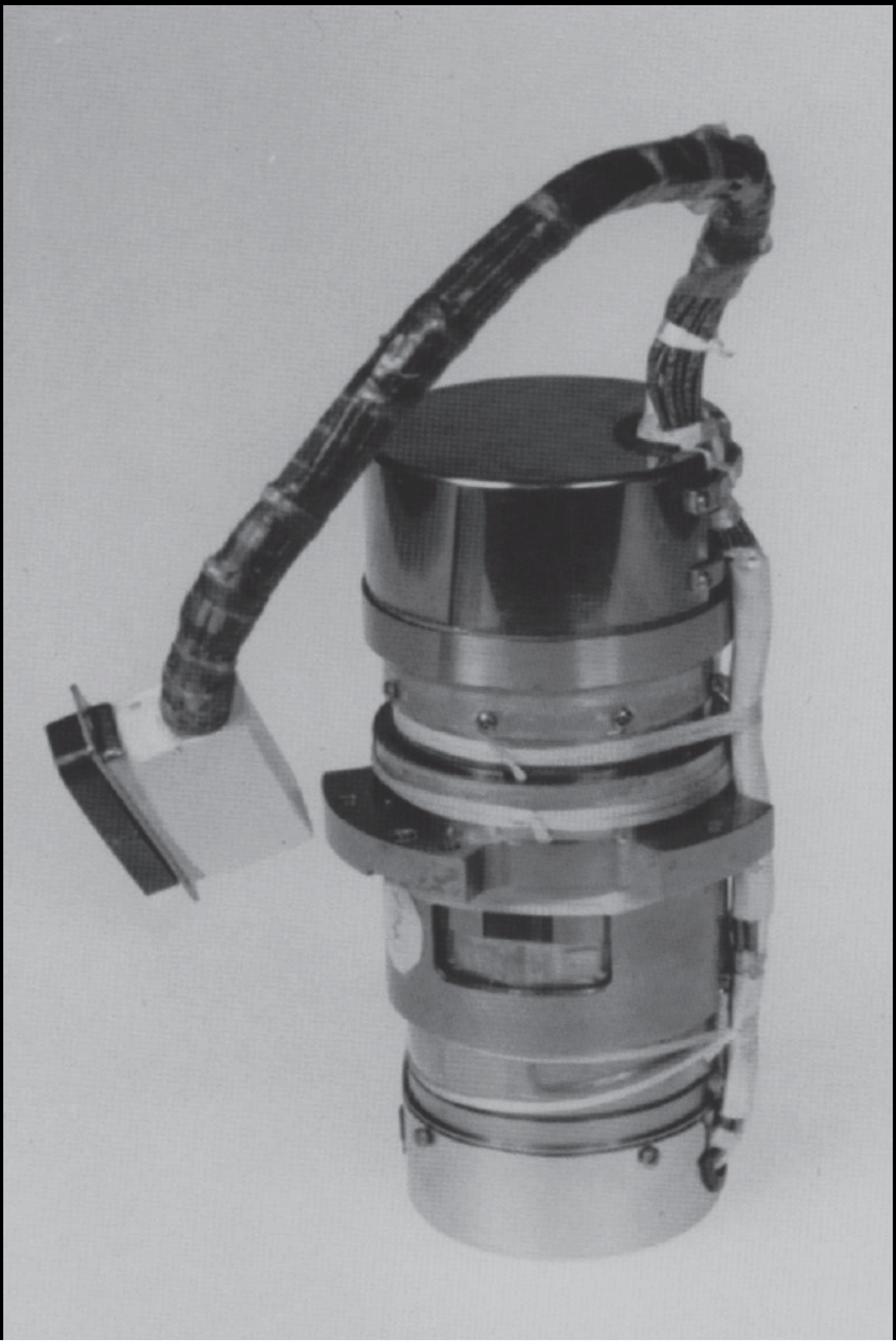
SM4 Payload Bay Configuration

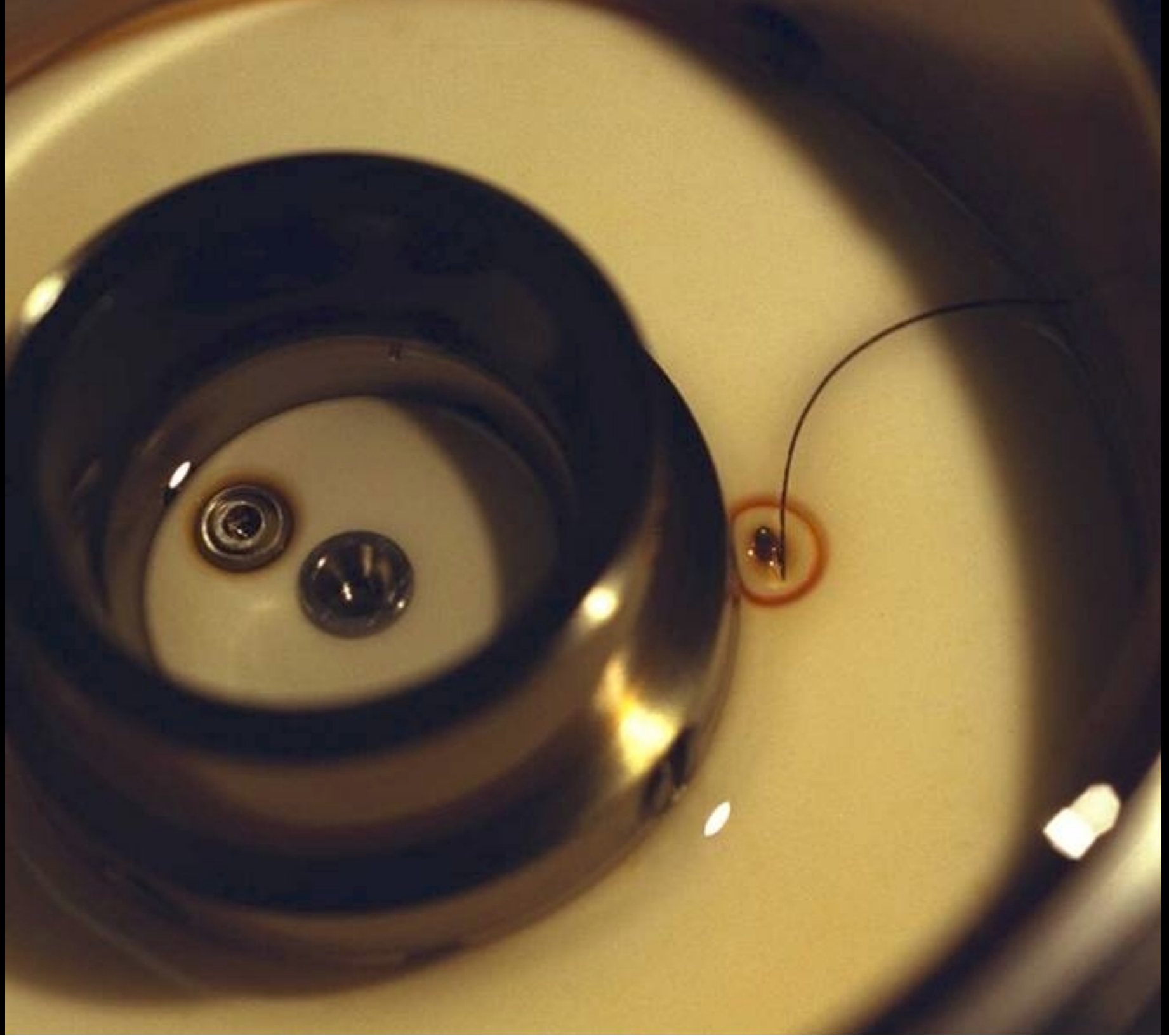


D 12 15 24 18
+00 00 00
+00 00 00
106 19 12 38

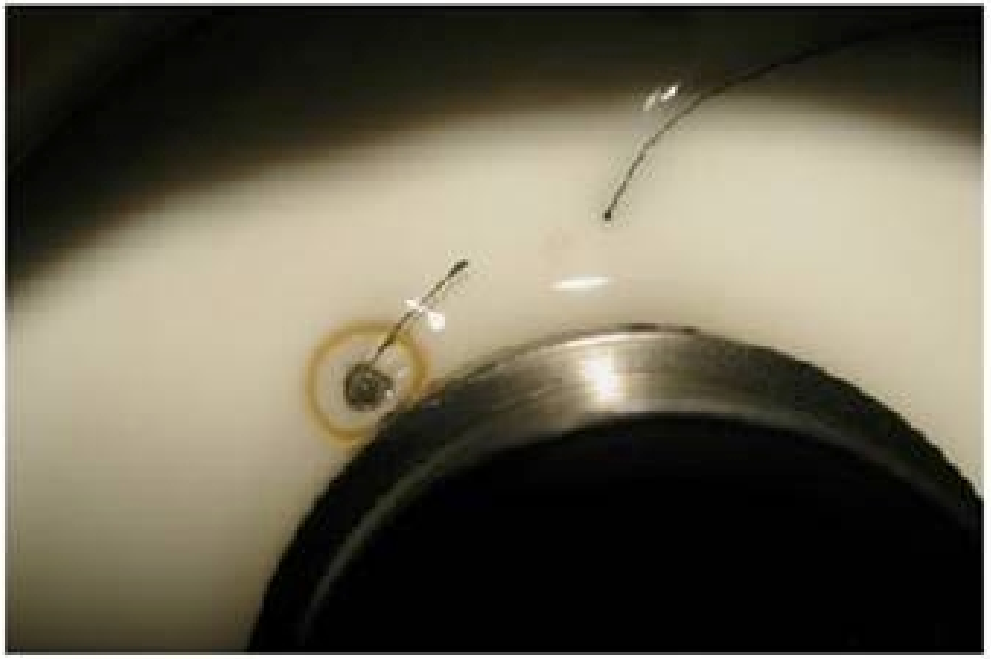


E1

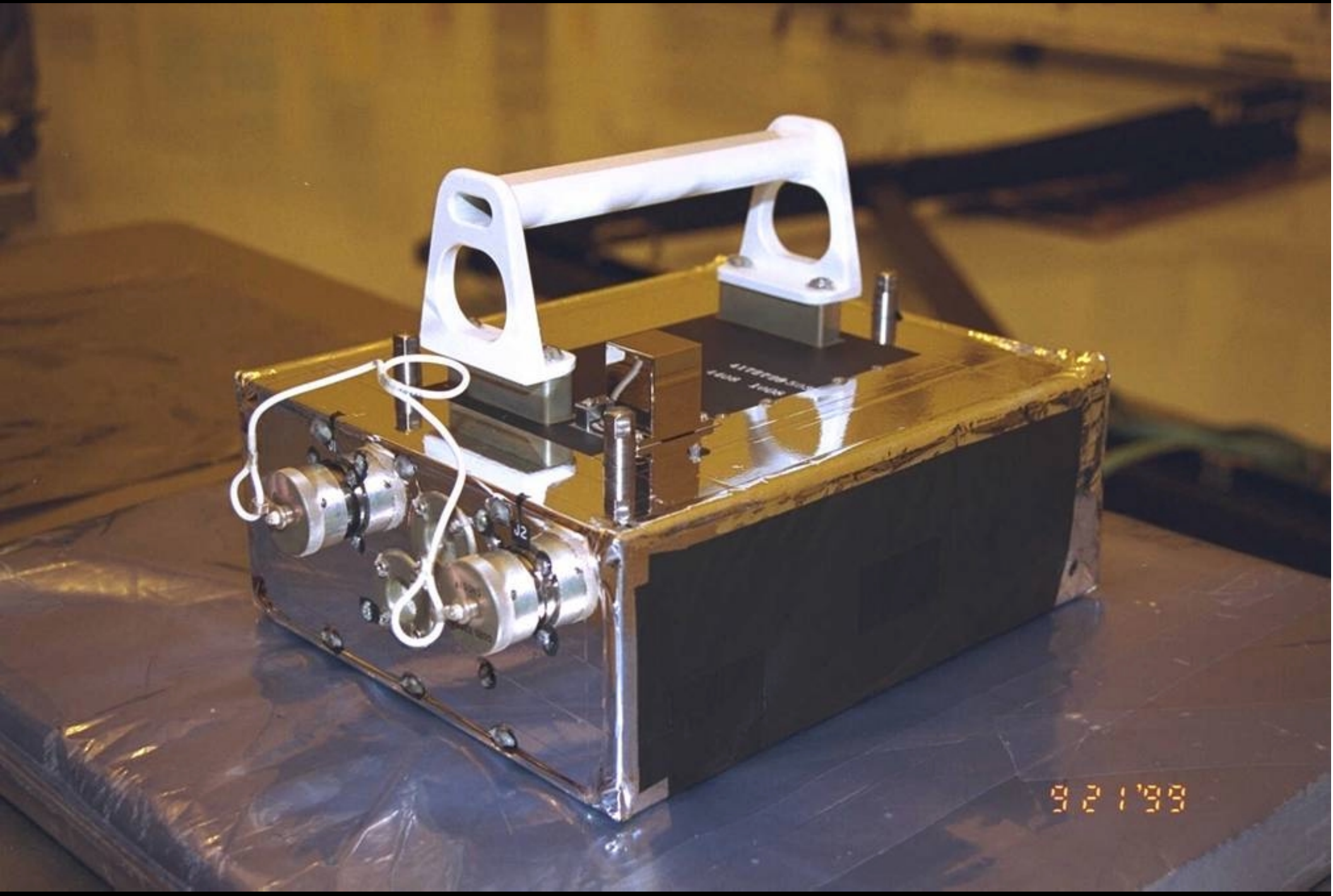


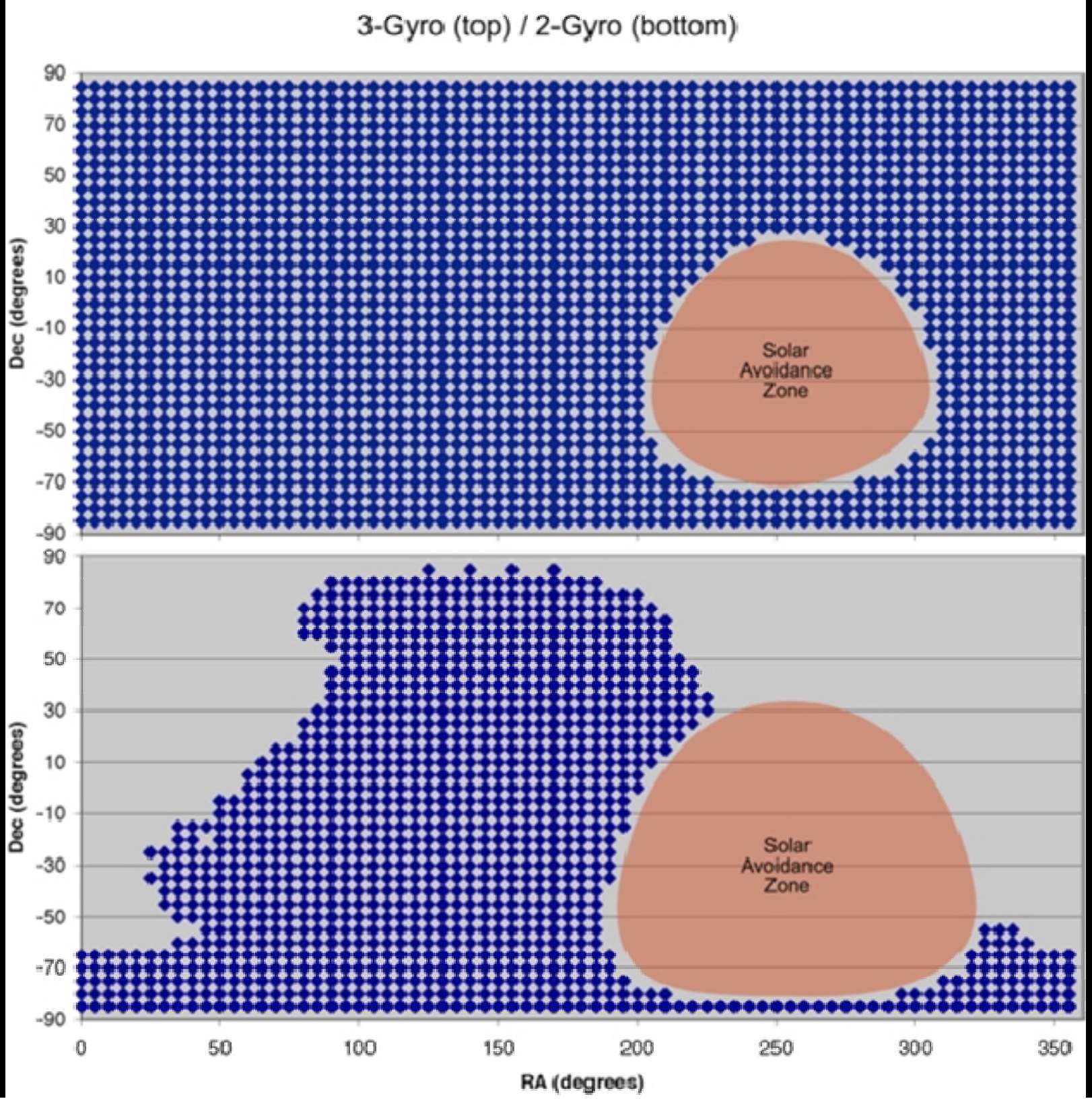


Gyro 112 - TG End Overview
112-DSCN0395.JPG

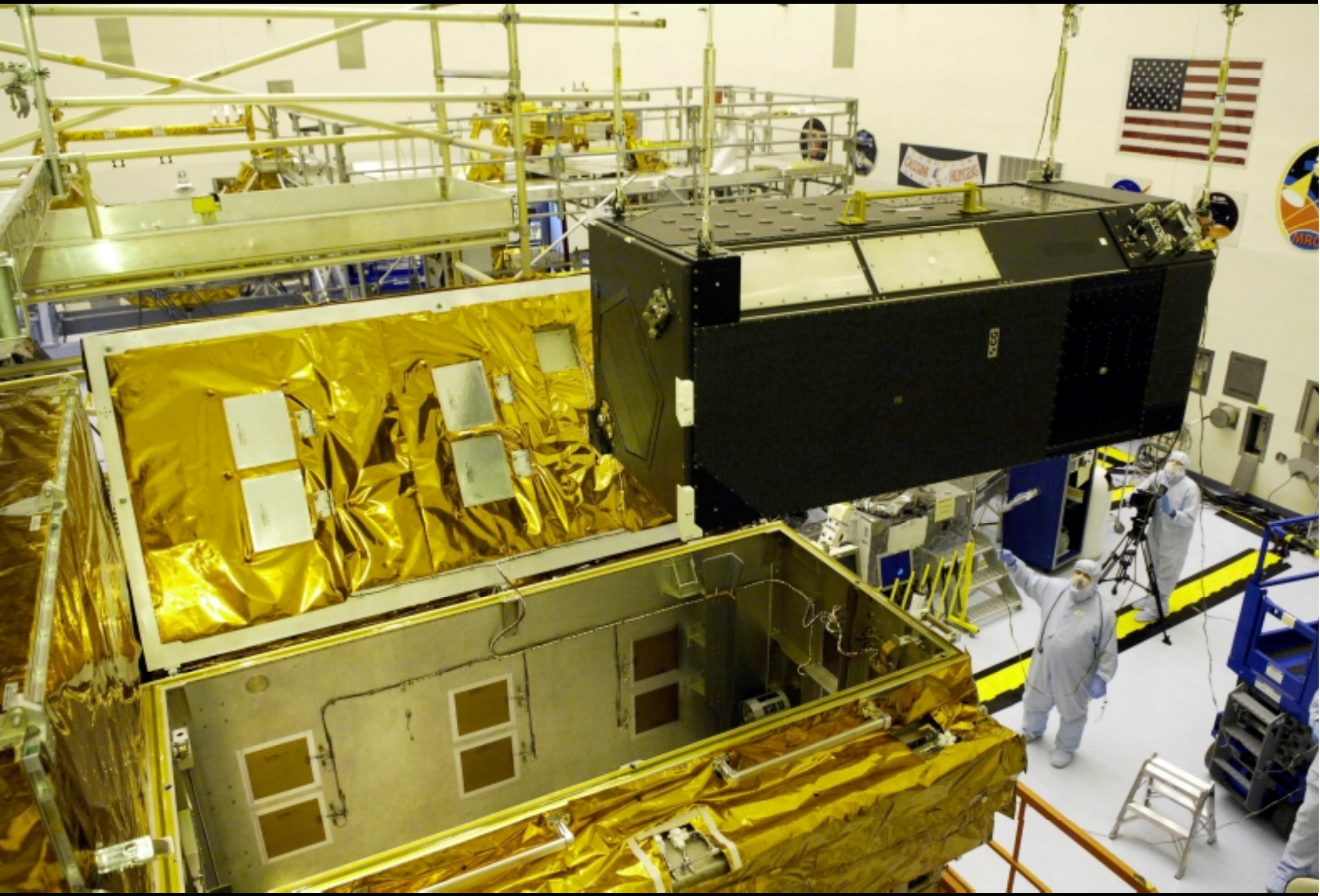


Gyro 112 - B- Flex Lead at B- Float Terminal, Broken Flex Lead
12-DSCN0396.JPG

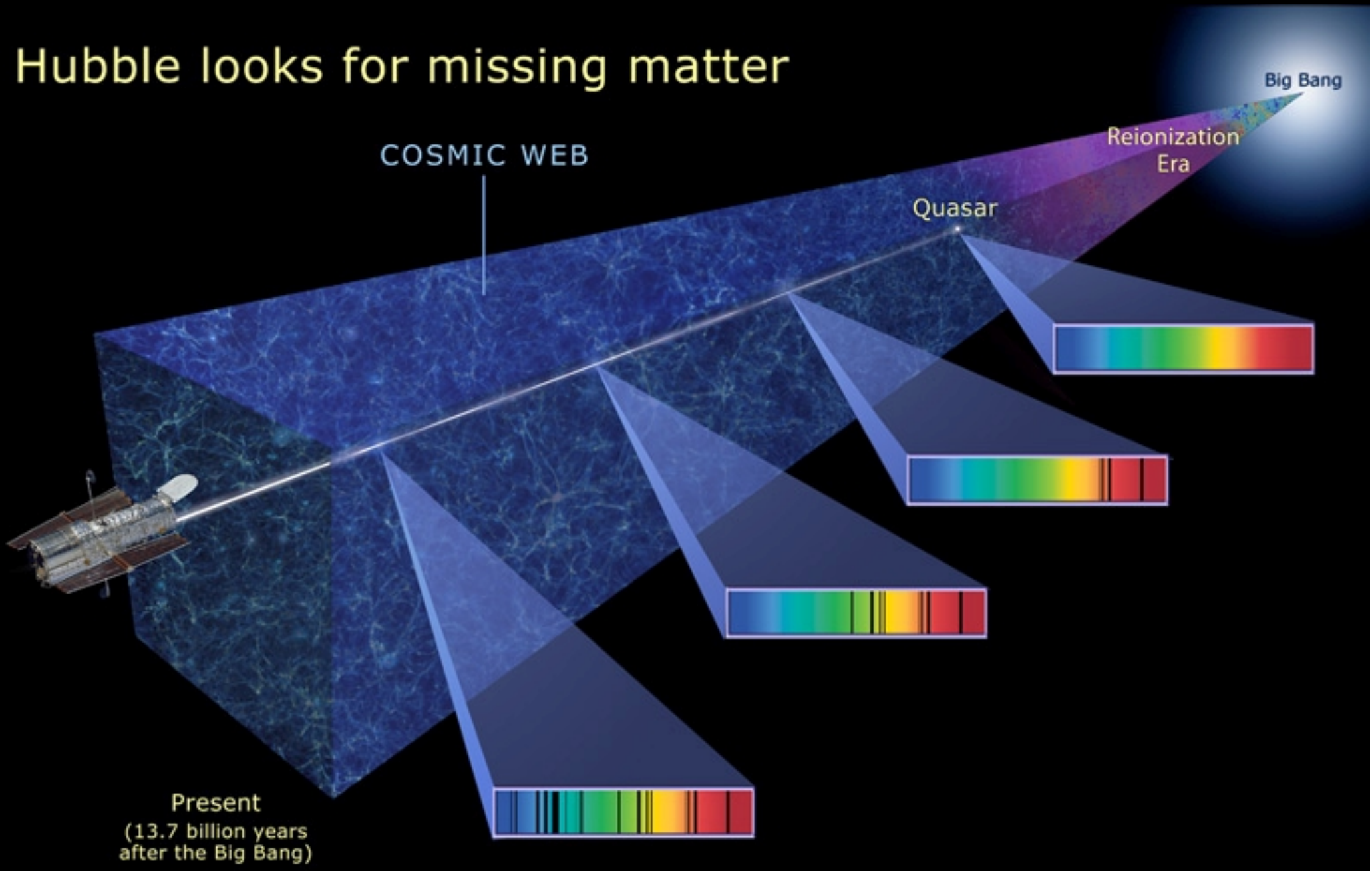

9 2 1 99

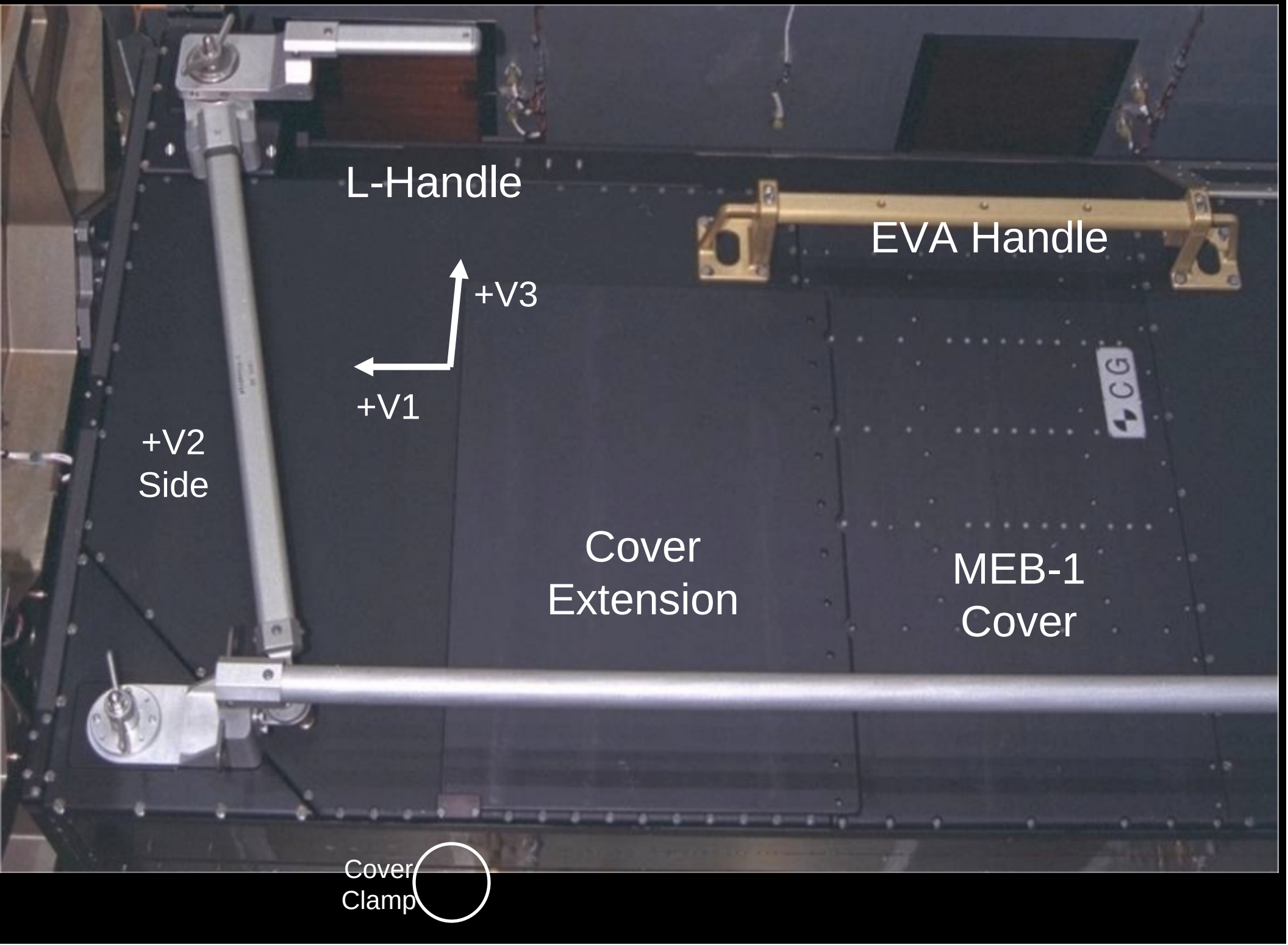

3-Gyro (top) / 2-Gyro (bottom)
Dec (degrees)
90
70
50
30
10
-10
-30
-50
-70
-90
Solar
Avoidance
Zone
Dec (degrees)
90
70
50
30
10
-10
-30
-50
-70
-90
Solar
Avoidance
Zone
0
50
100
150
200
250
300
350
RA (degrees)

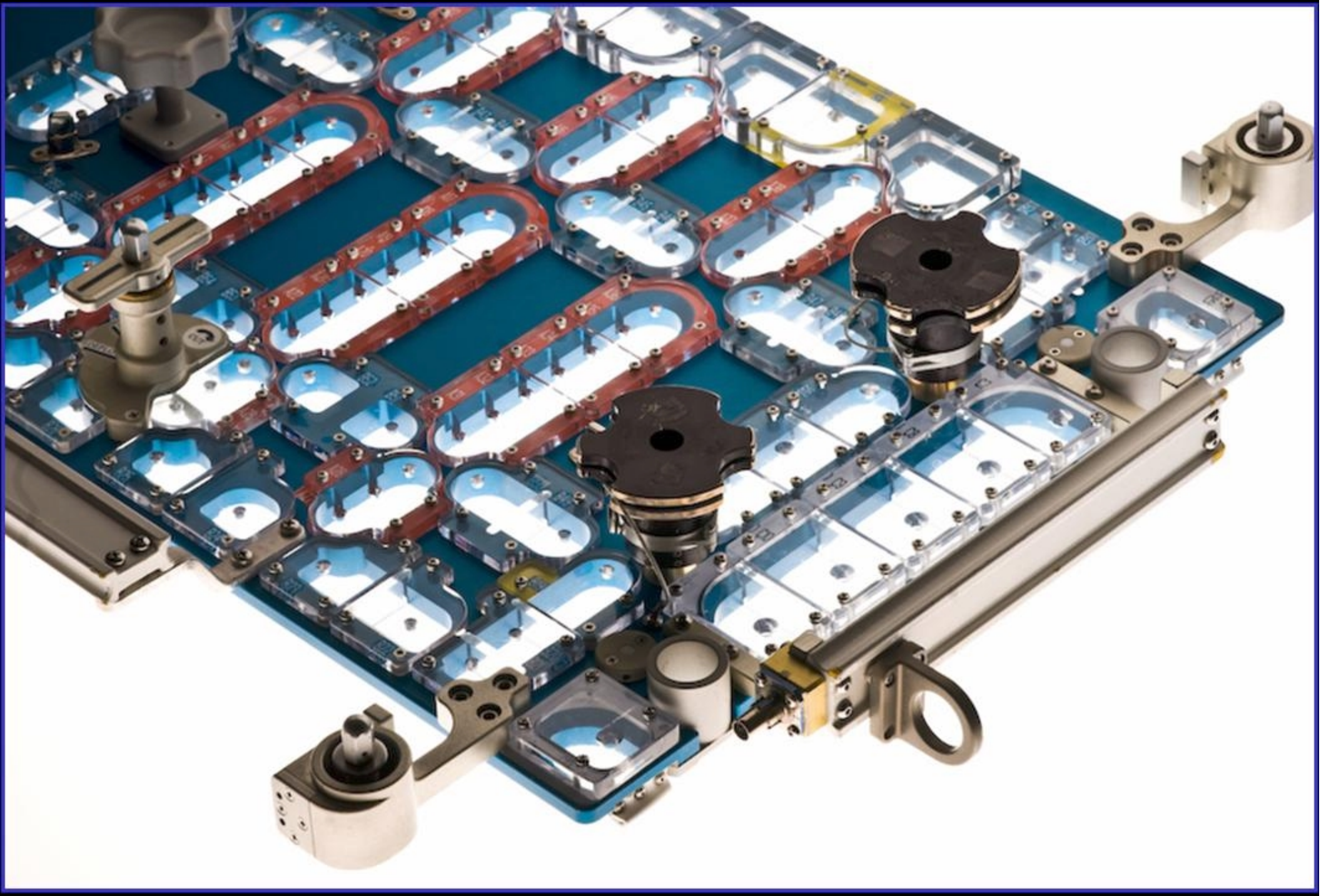
COS
COSMIC ORIGINS SPECTROGRAPH

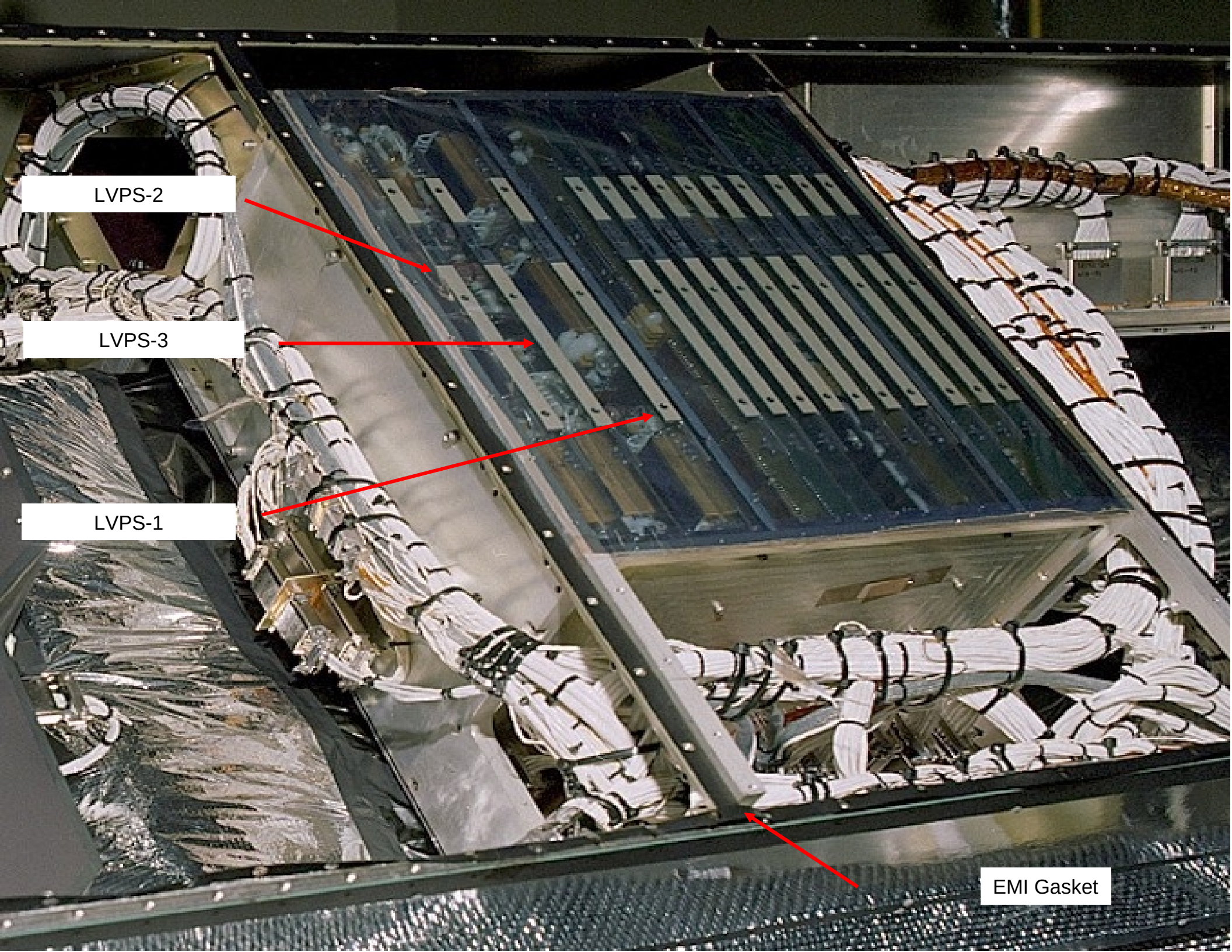


Hubble looks for missing matter

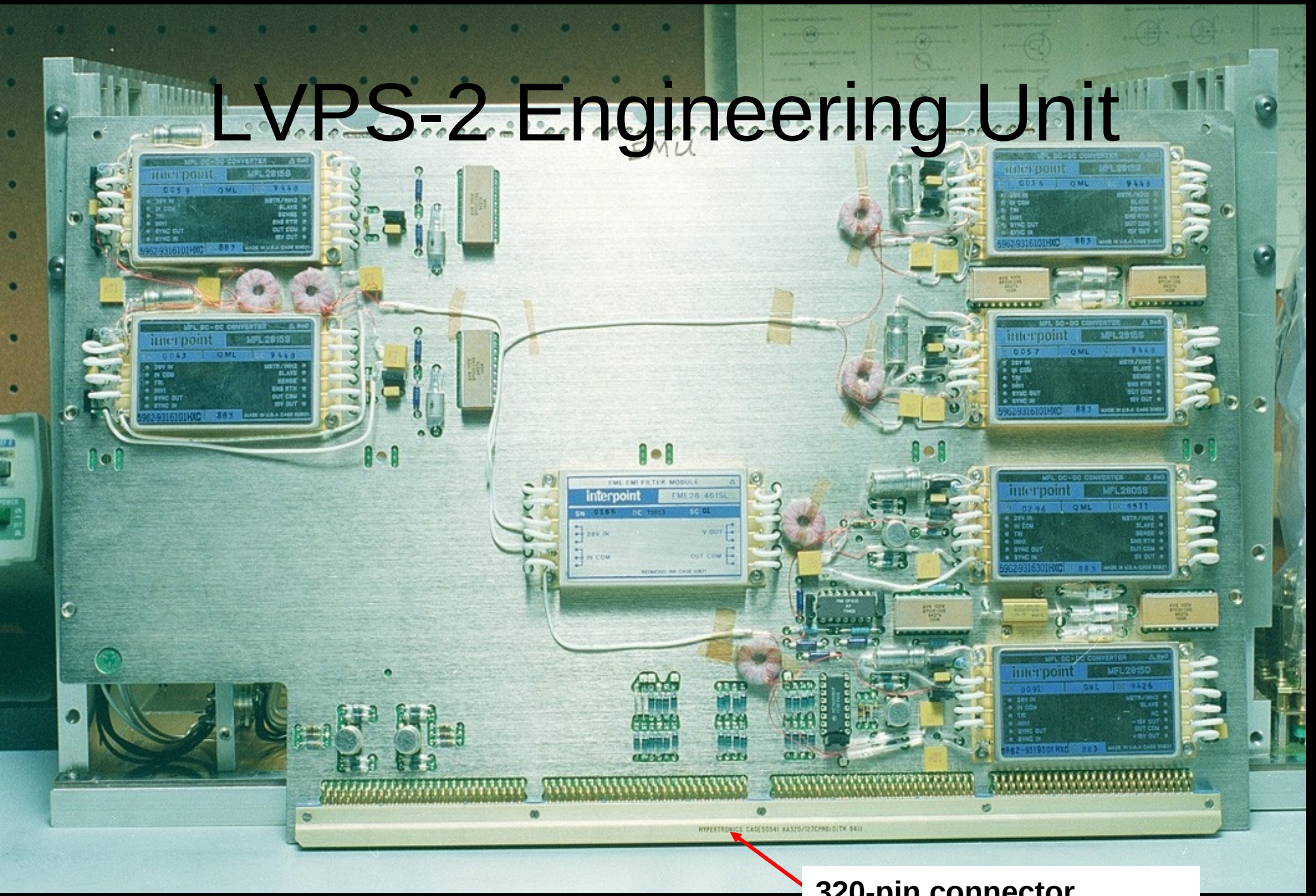


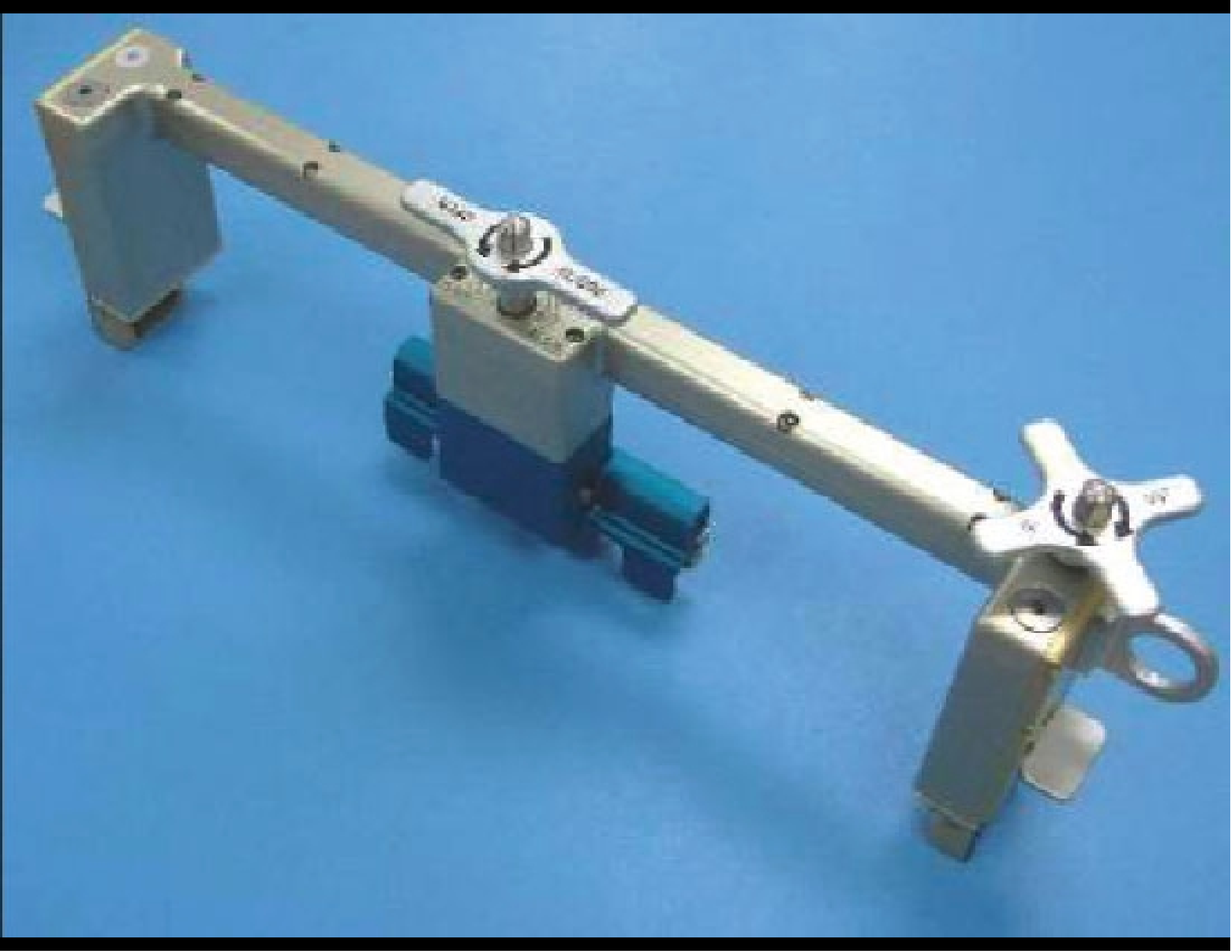

L-Handle
EVA Handle
+V3
+V1
+V2
Side
CG
Cover
Extension
MEB-1
Cover
Cover
Clamp




LVPS-2
LVPS-3
LVPS-1
EMI Gasket

LVPS-2 Engineering Unit

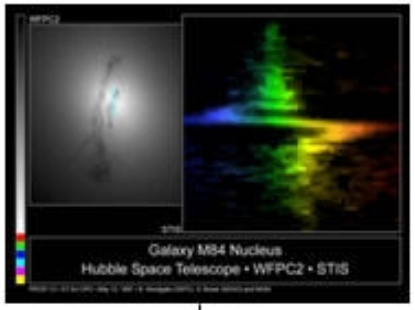




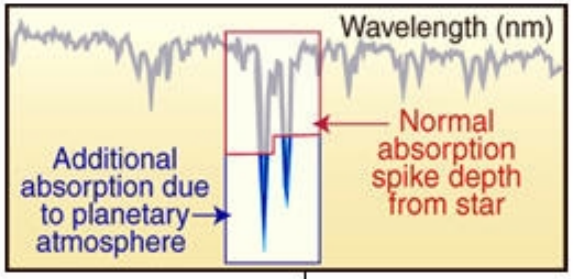
STIS Is The Most Versatile Spectrograph Ever To Fly In Space

Objectives: Demographics of Supermassive Black Holes, Active Galactic Nuclei, Interstellar Medium, Exoplanetary Atmospheres, Solar System Aurorae

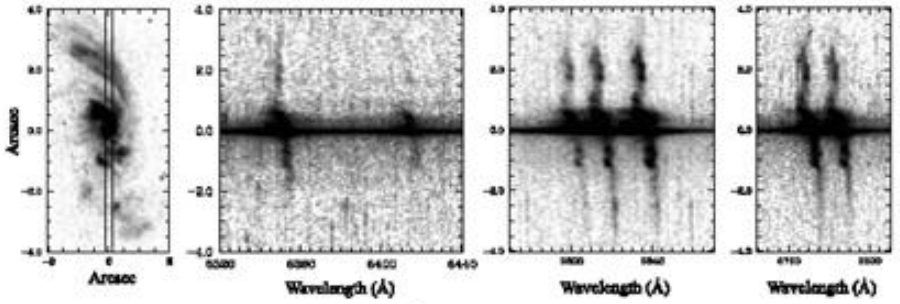
- STIS brought 2D/Hi-Res/UV-Opt-Near IR spectroscopy to HST (a unique capability)
- Pioneered studies of supermassive black holes, complex dynamics of galaxy nuclei
- Produced first (only) detection of an exoplanetary atmosphere
- Was producing more papers than any other HST instrument when operations ceased
- With COS, would bring the full set of spectroscopic tools to HST



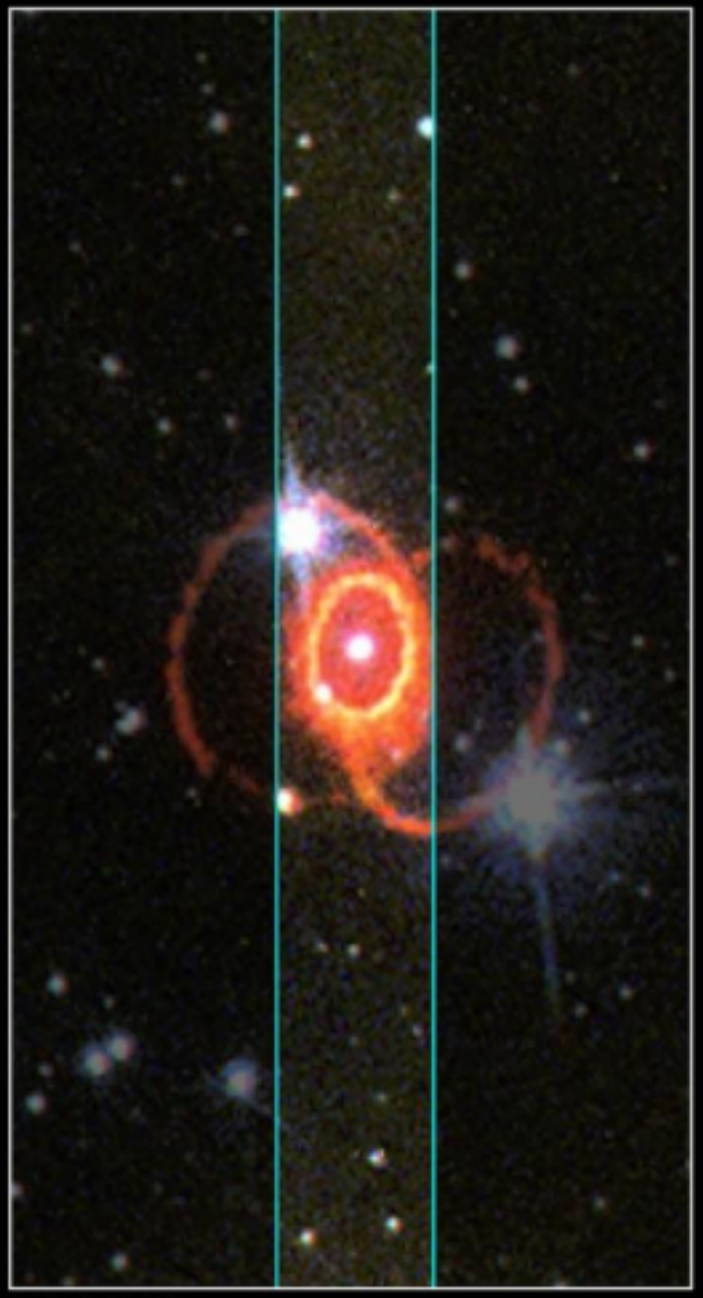
Supermassive black holes & dependencies on galaxy properties



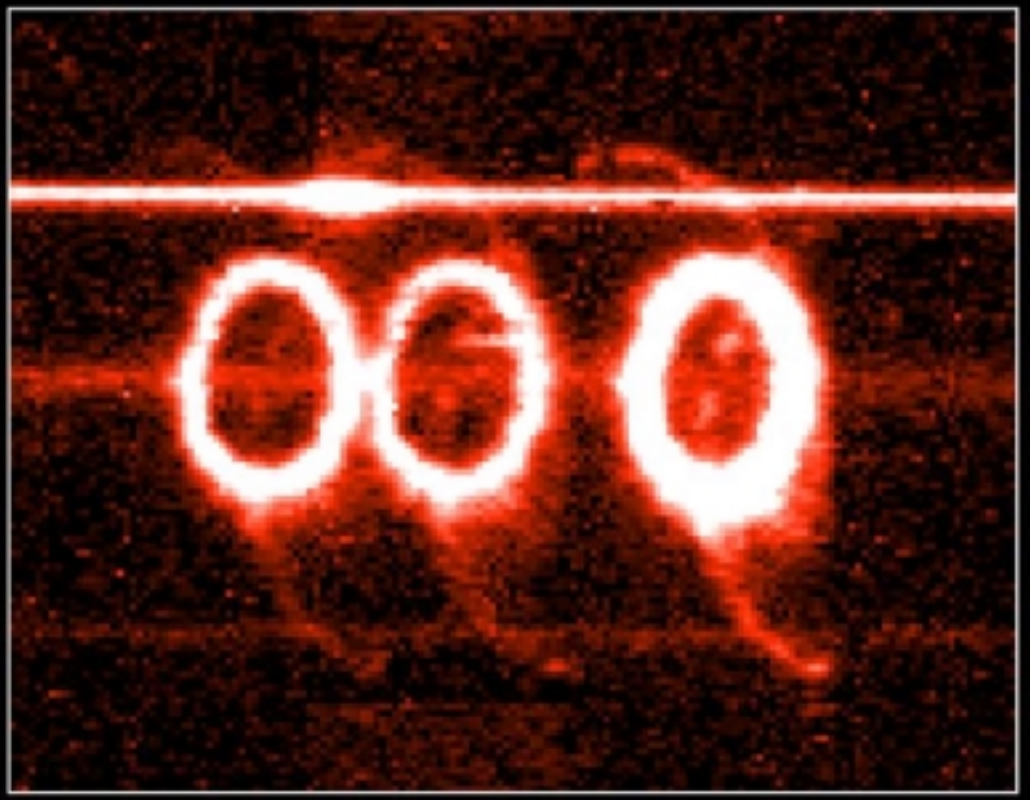
Exoplanetary atmospheres: increasing the sample to ~ 10!

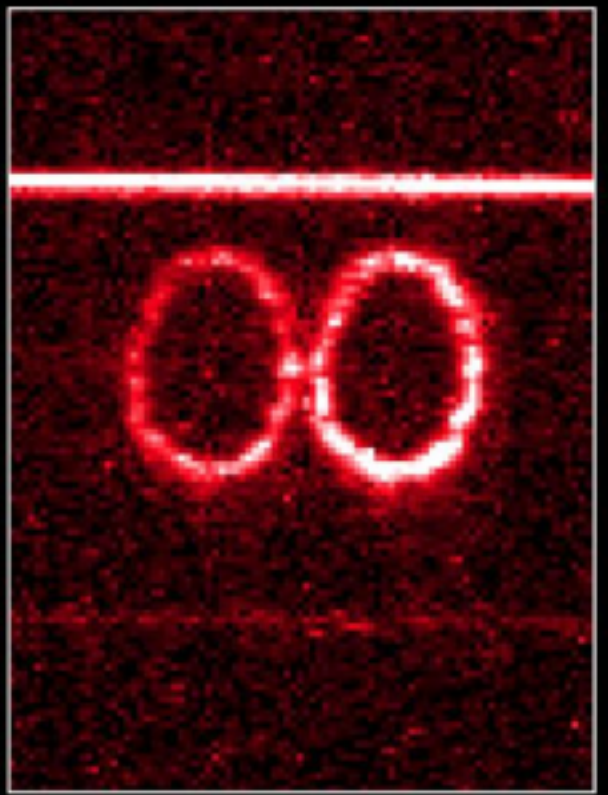


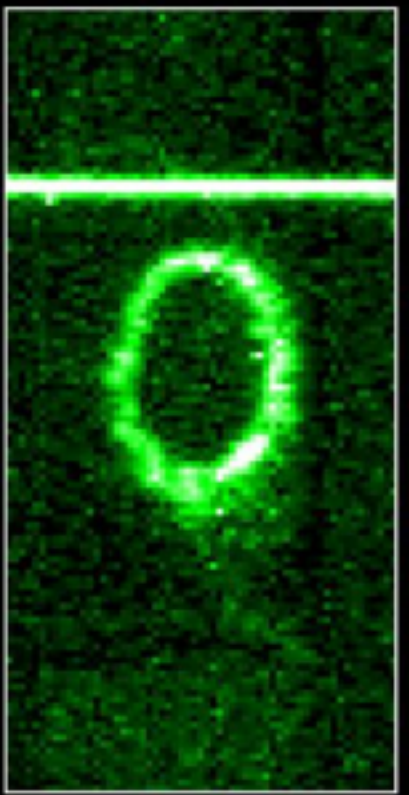
Active galactic nuclei—making full use of STIS's unique spatial coverage to probe dynamics of complex objects



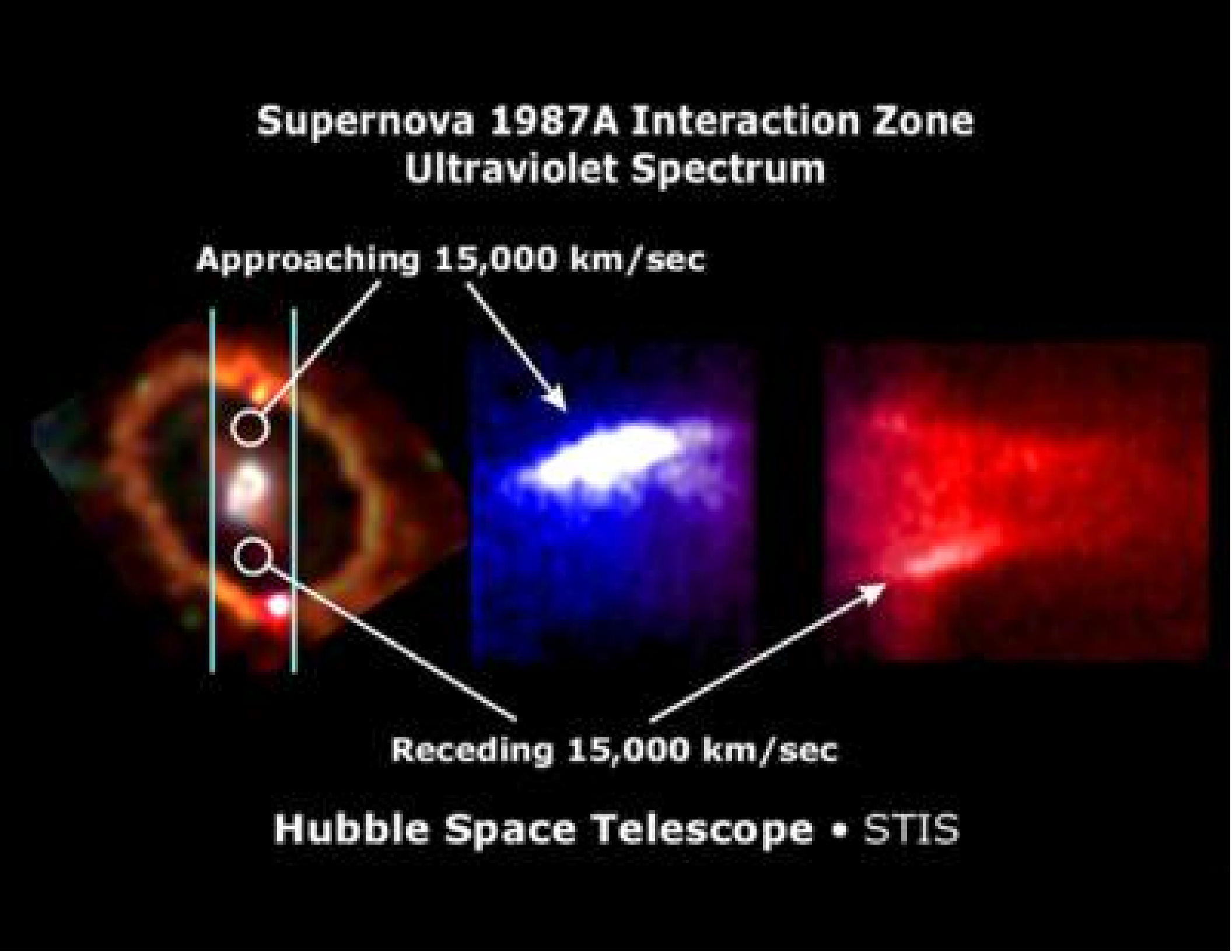
WFPC2

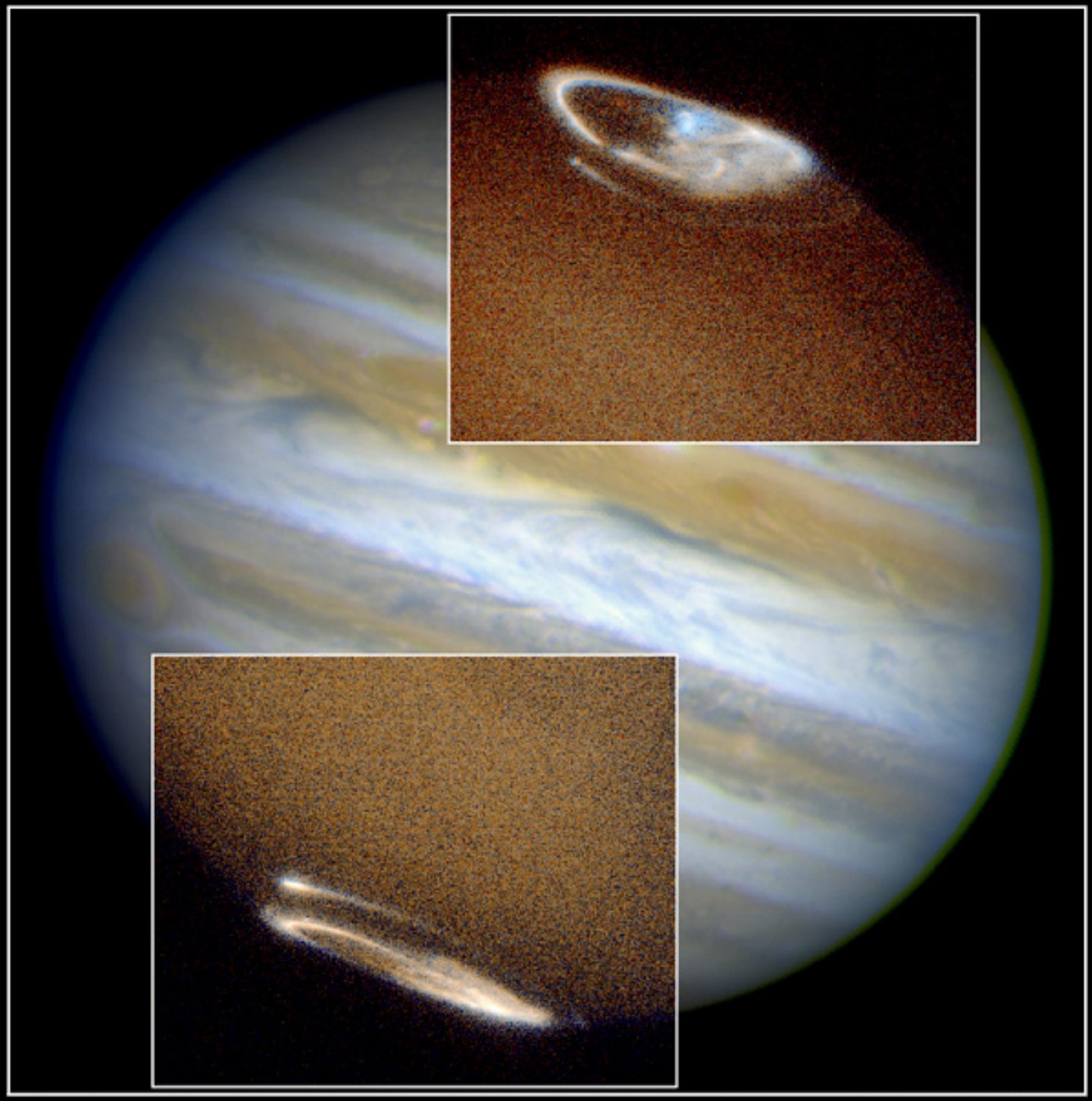






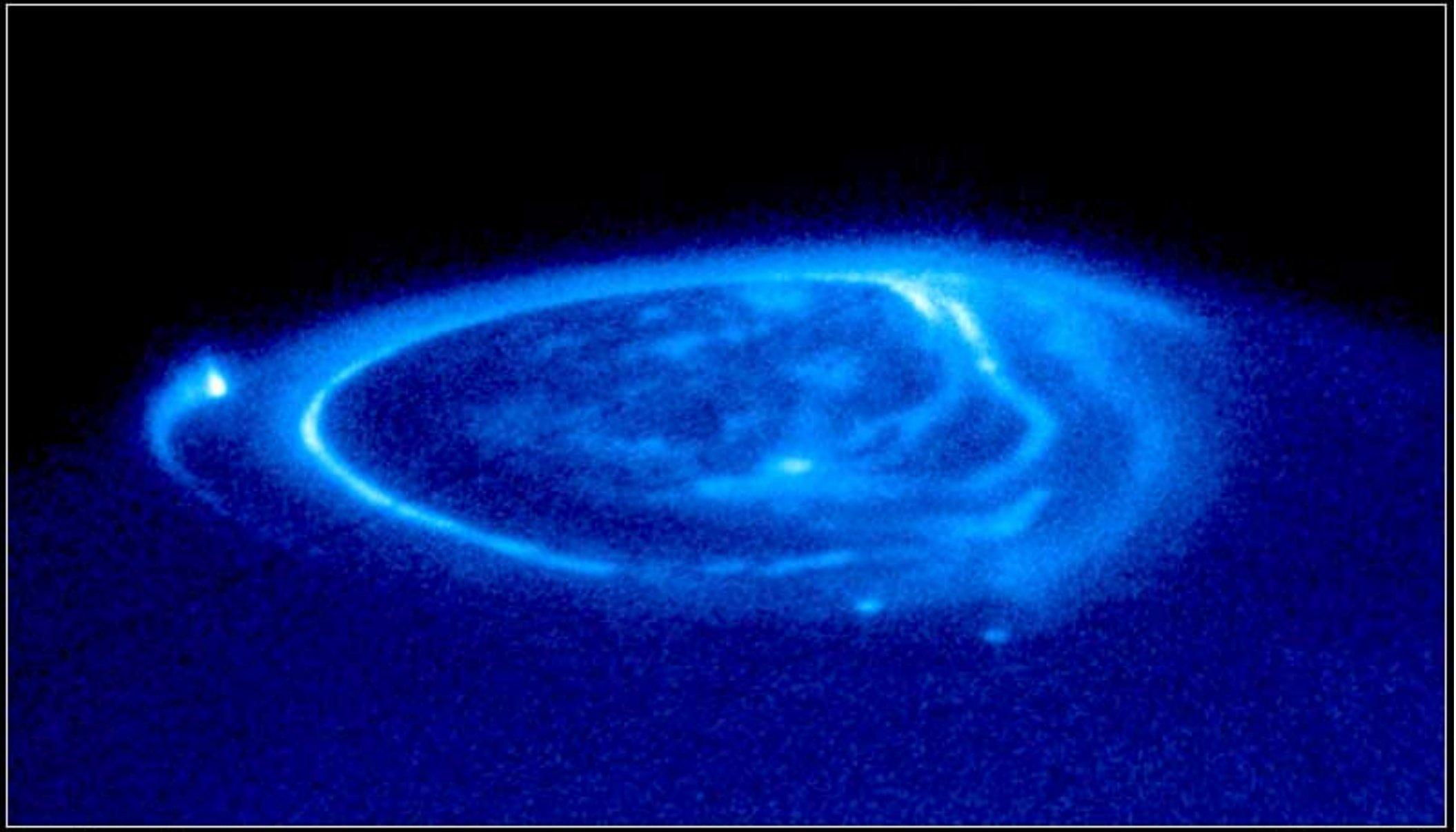
STIS


Supernova 1987A Interaction Zone
Ultraviolet Spectrum
Approaching 15,000 km/sec
Receding 15,000 km/sec
Hubble Space Telescope • STIS



Jupiter Aurora HST • STIS • WFPC2

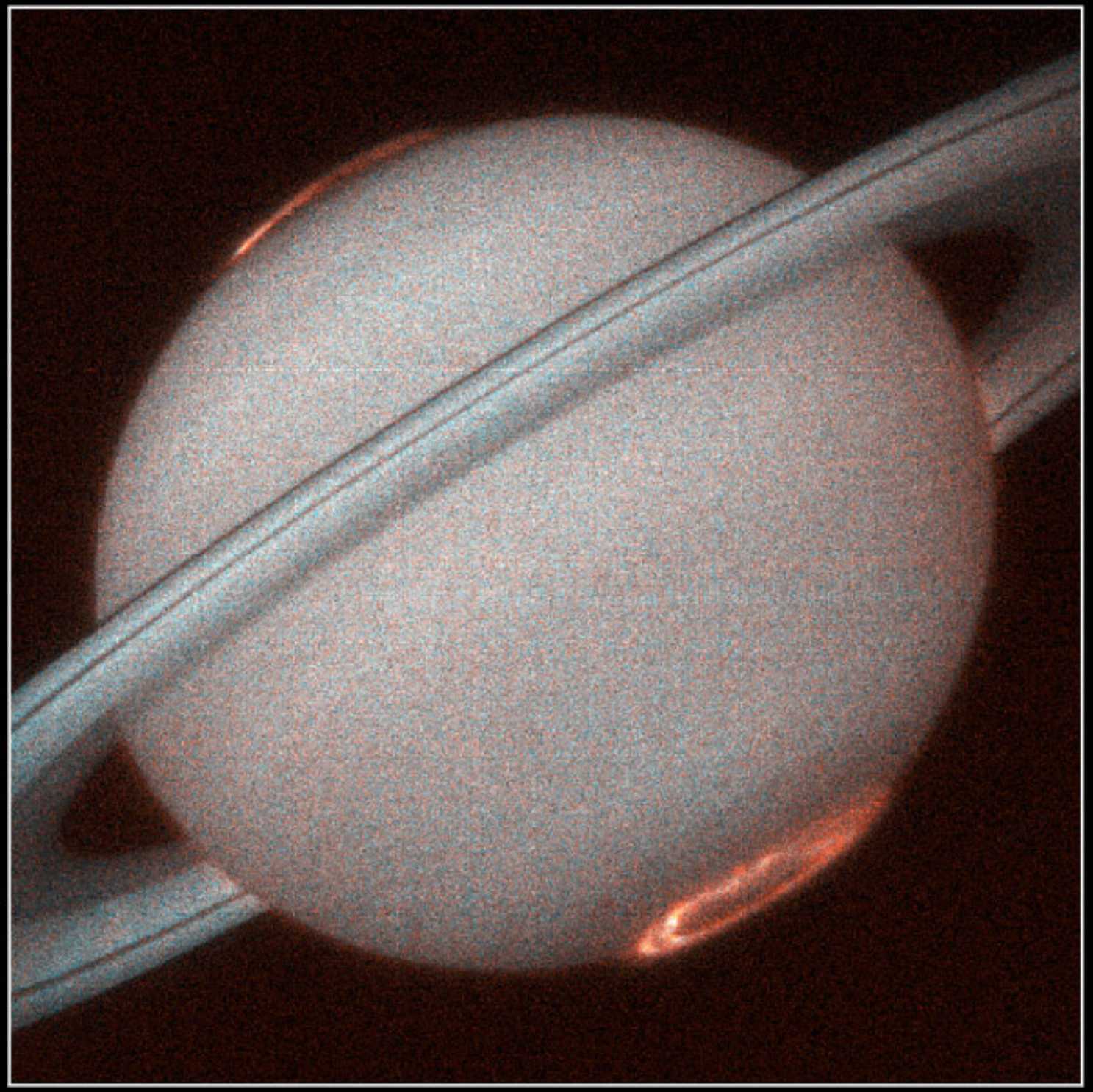
PRC98-04 • ST ScI OPO • January 7, 1998
J. Clarke (University of Michigan) and NASA



Jupiter Aurora

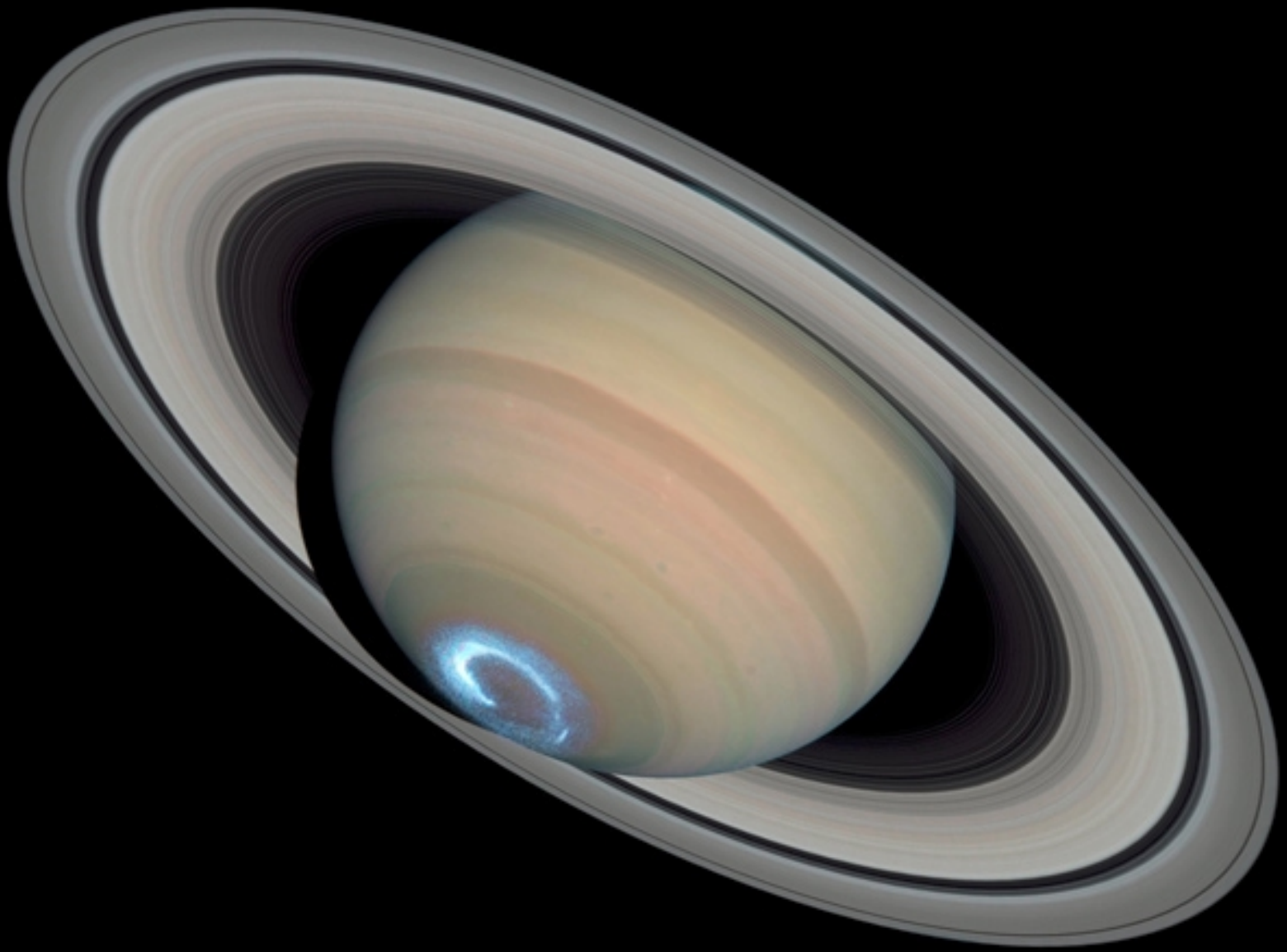
HST • STIS

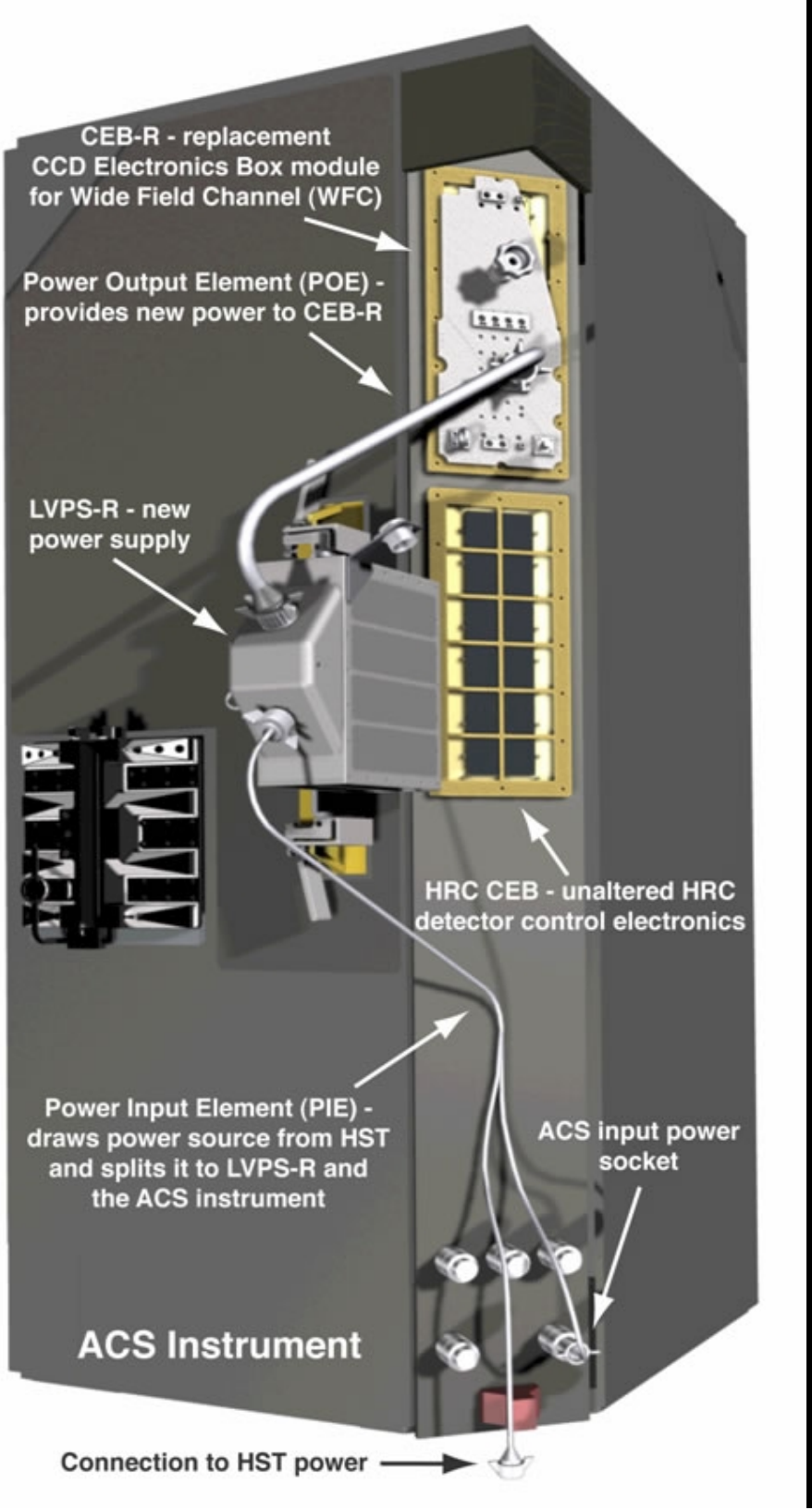
NASA and J. Clarke (University of Michigan) • STScI-PRC00-38

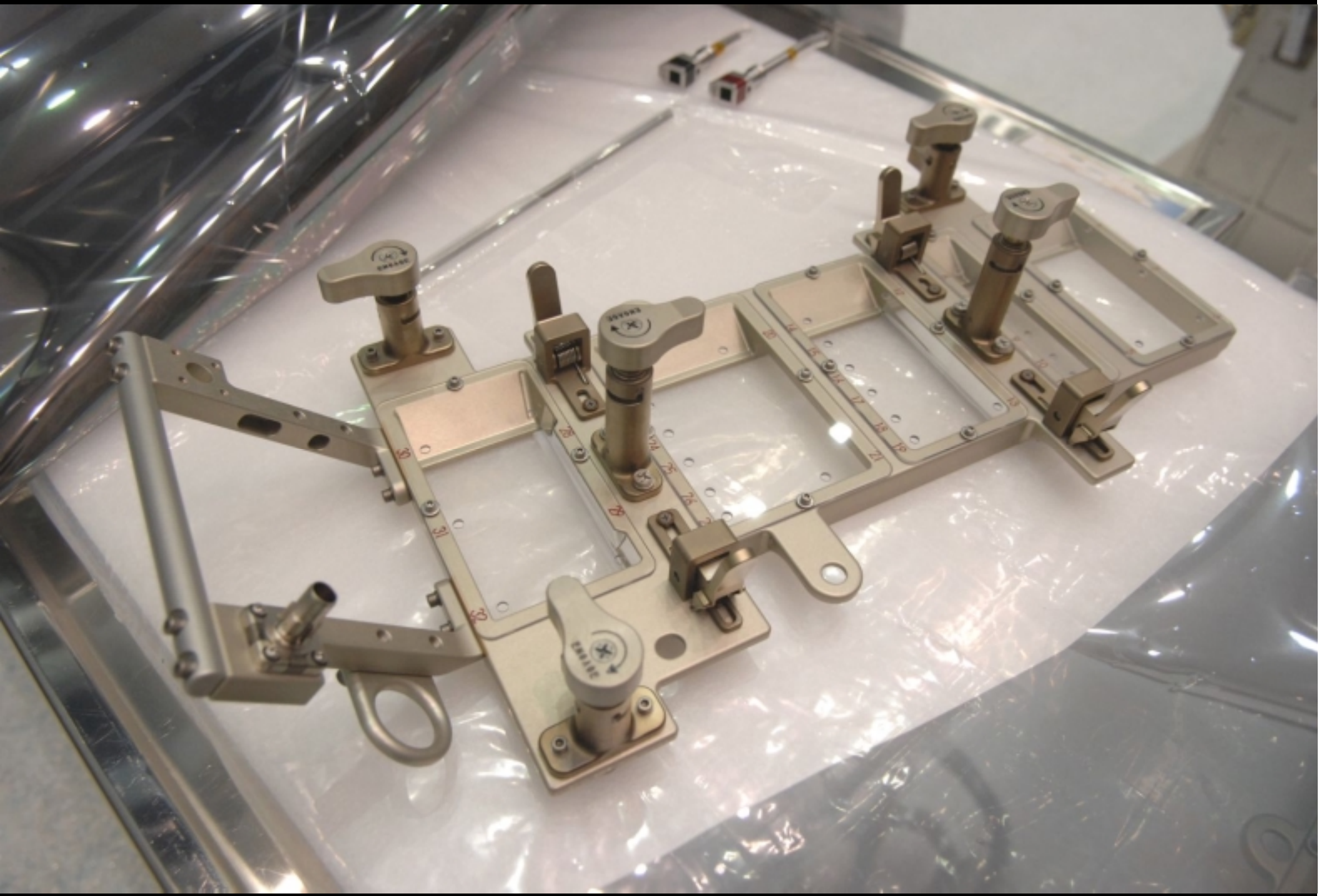


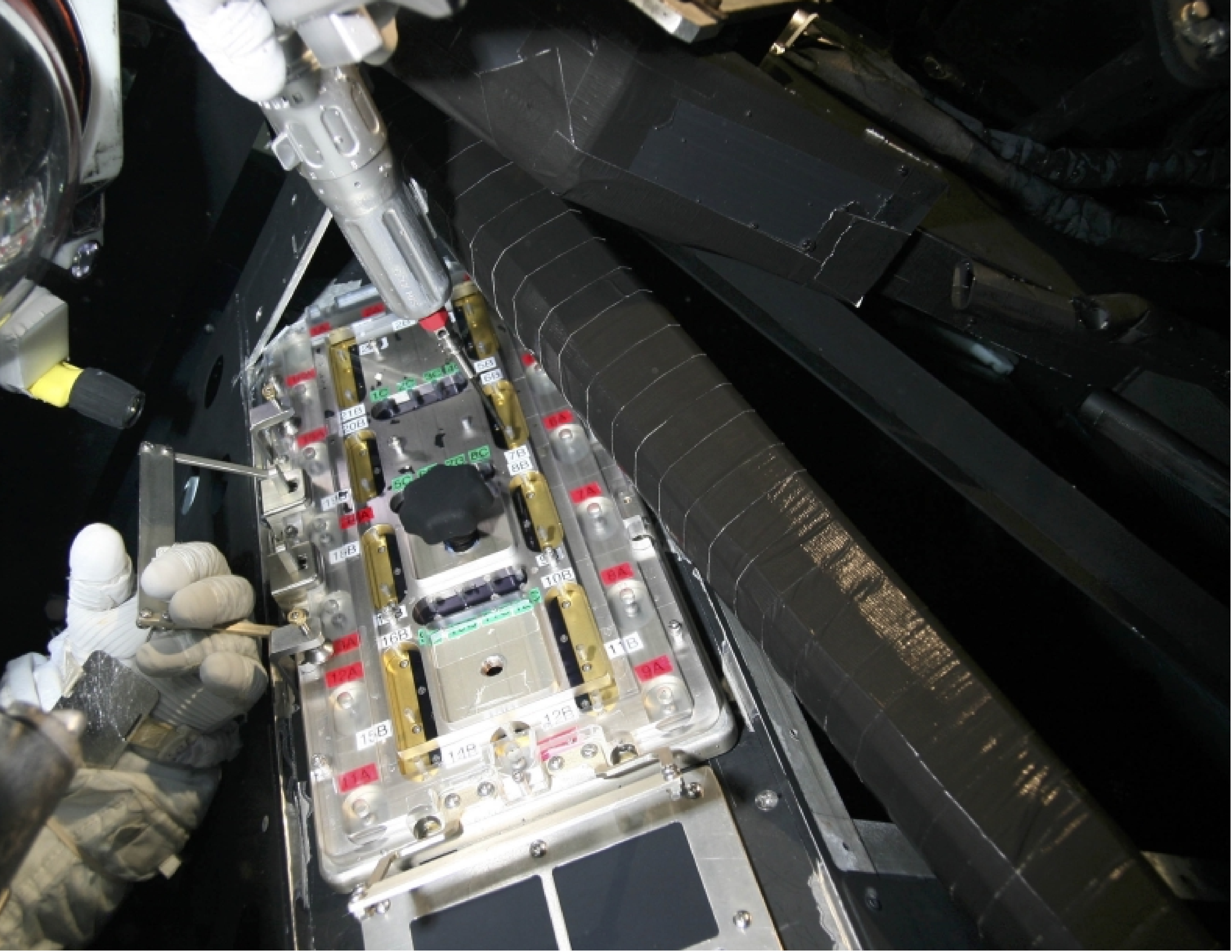
Saturn Aurora HST • STIS

PRC98-05 • ST ScI OPO • January 7, 1998 • J. Trauger (JPL) and NASA

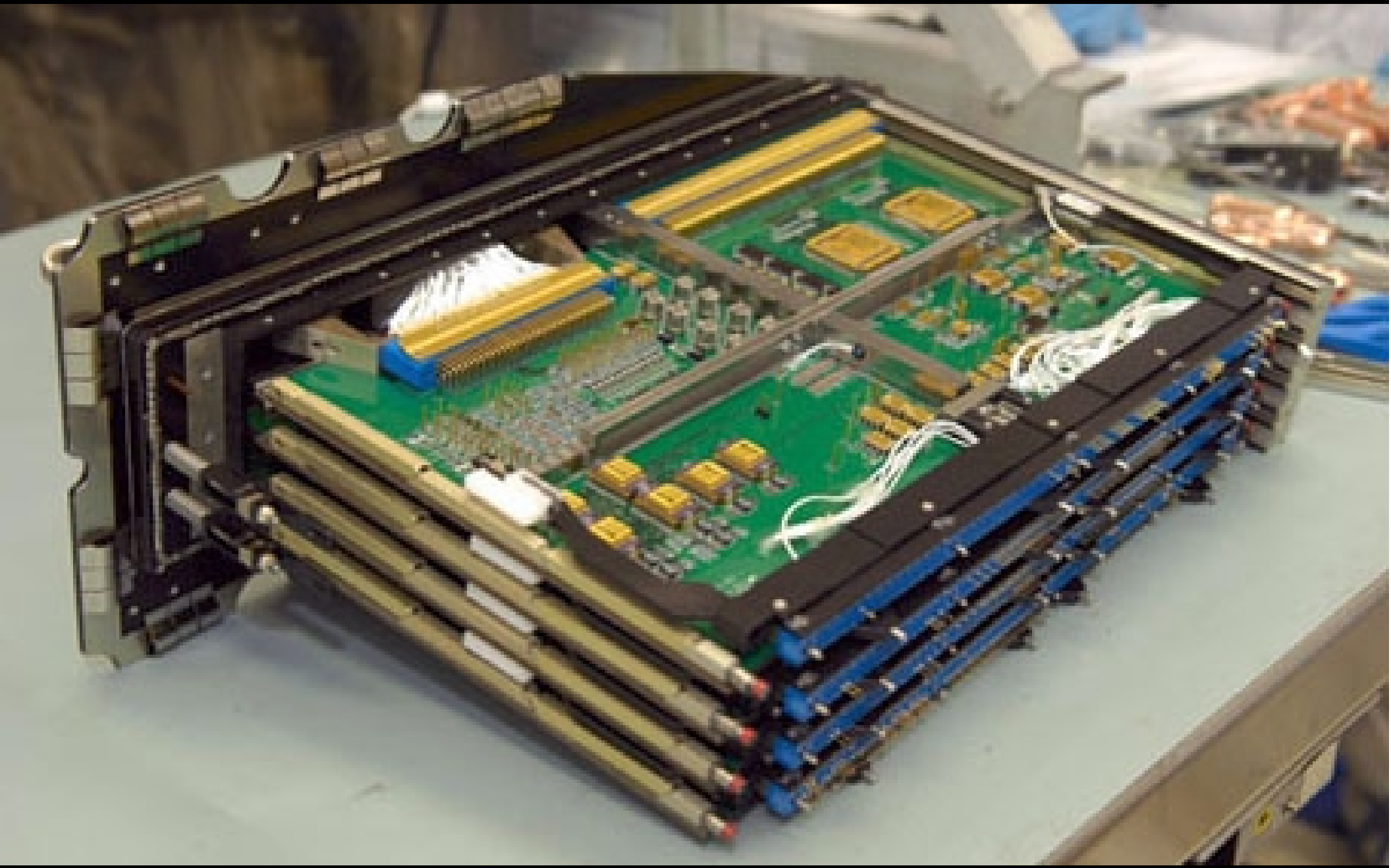



CEB-R - replacement
CCD Electronics Box module
for Wide Field Channel (WFC)
Power Output Element (POE) -
provides new power to CEB-R
LVPS-R - new
power supply
HRC CEB - unaltered HRC
detector control electronics
Power Input Element (PIE) -
draws power source from HST
and splits it to LVPS-R and
the ACS instrument
ACS input power
socket
ACS Instrument
Connection to HST power





11B
9A
15B
14B
12A
16B
10B
8A
7A
6A
7B
8B
21B
20B



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J8
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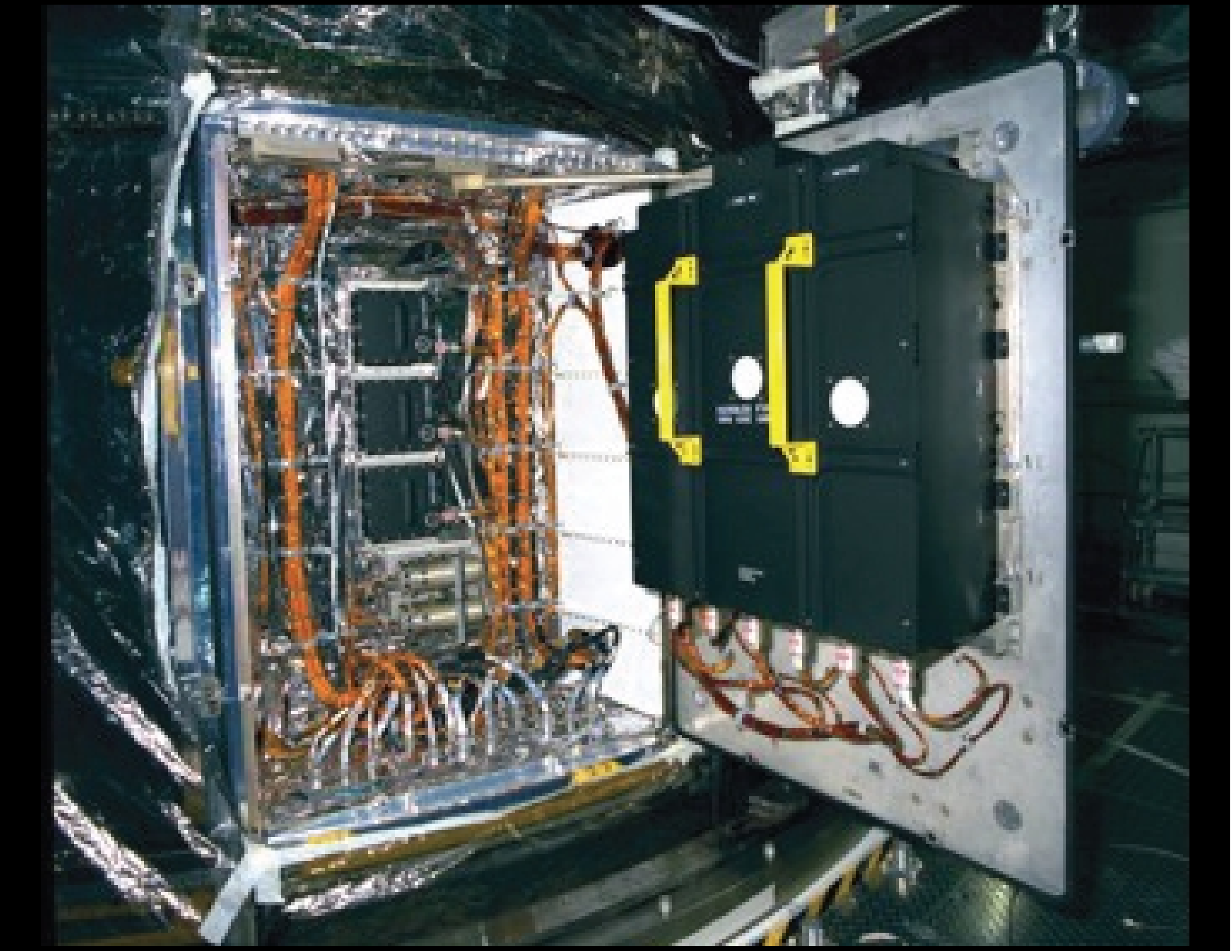

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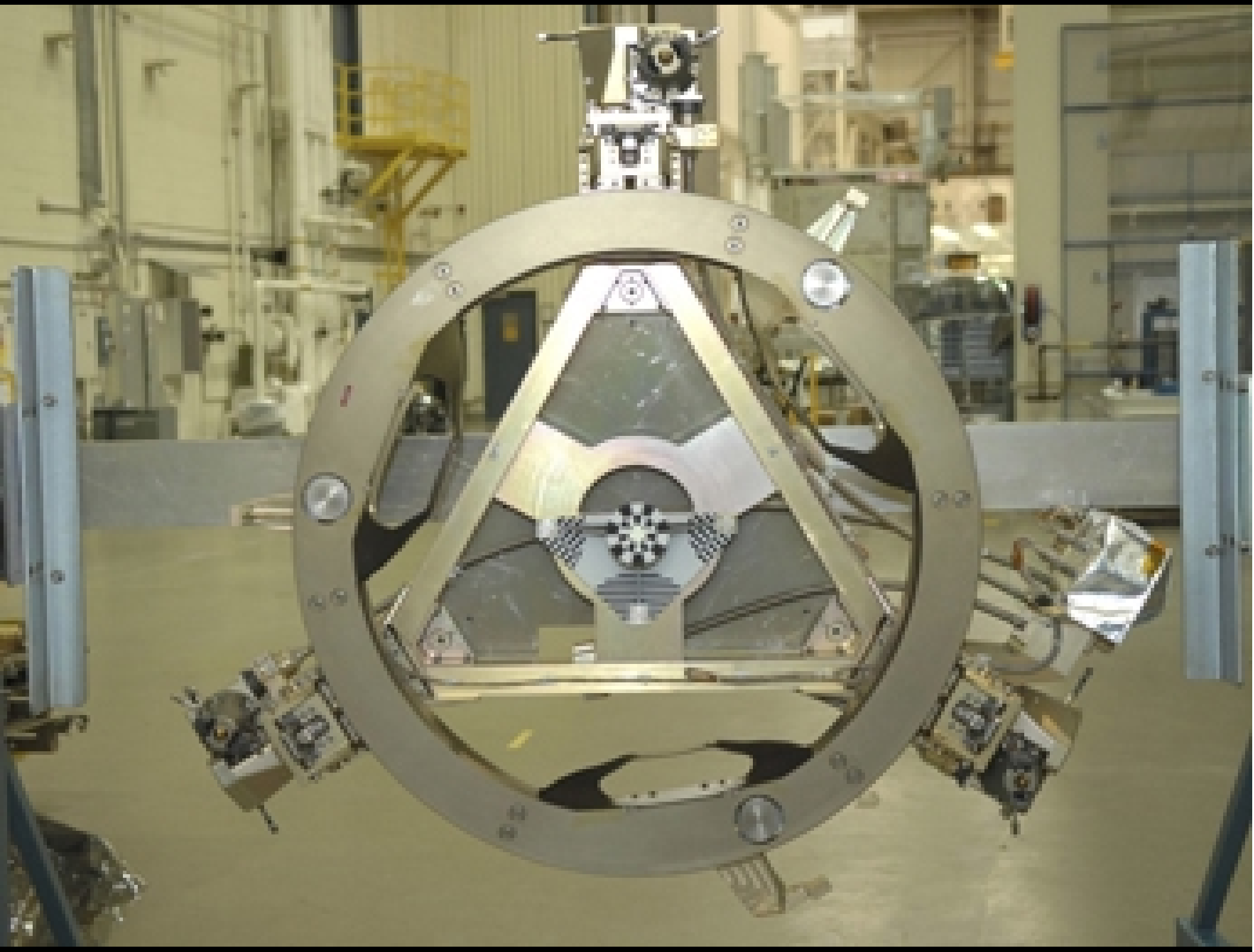
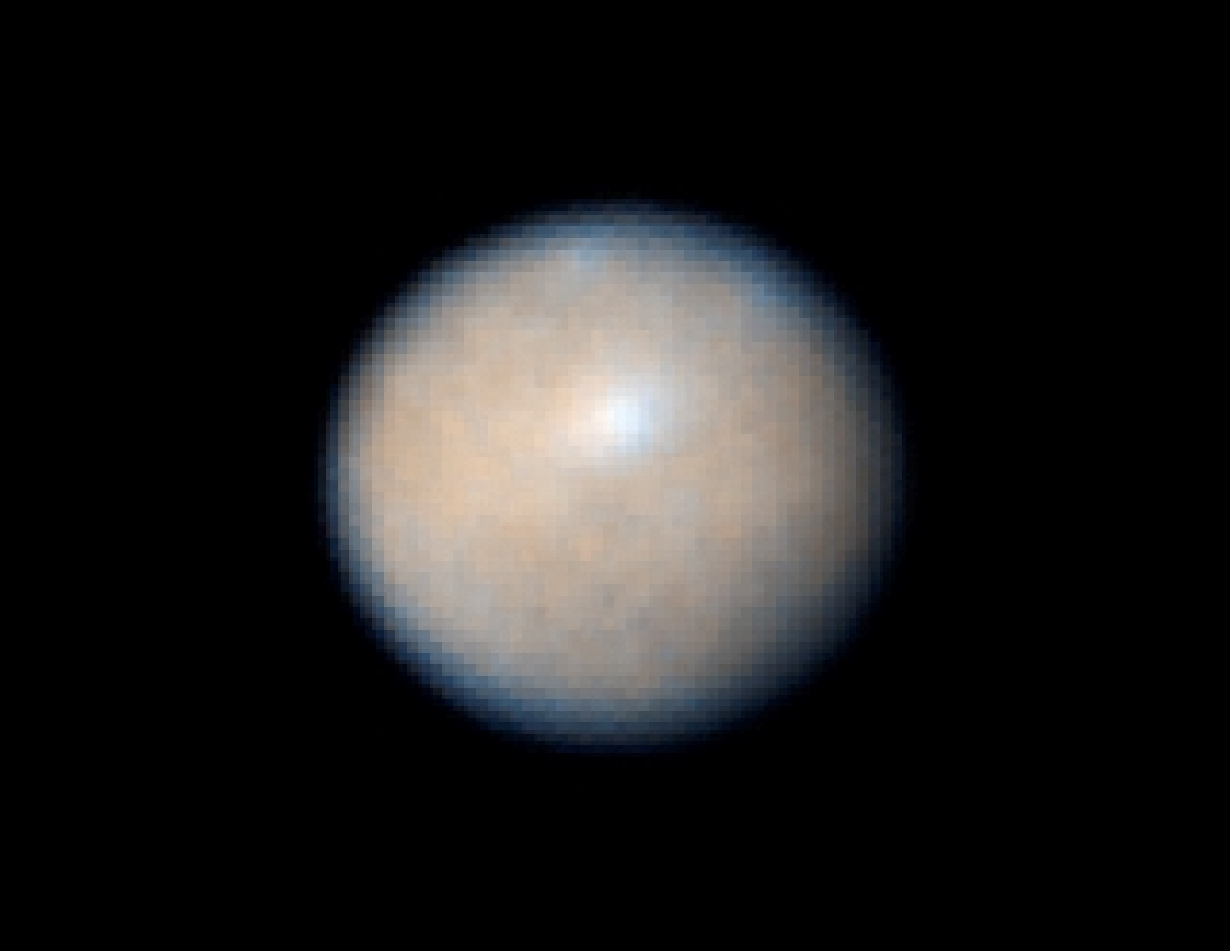
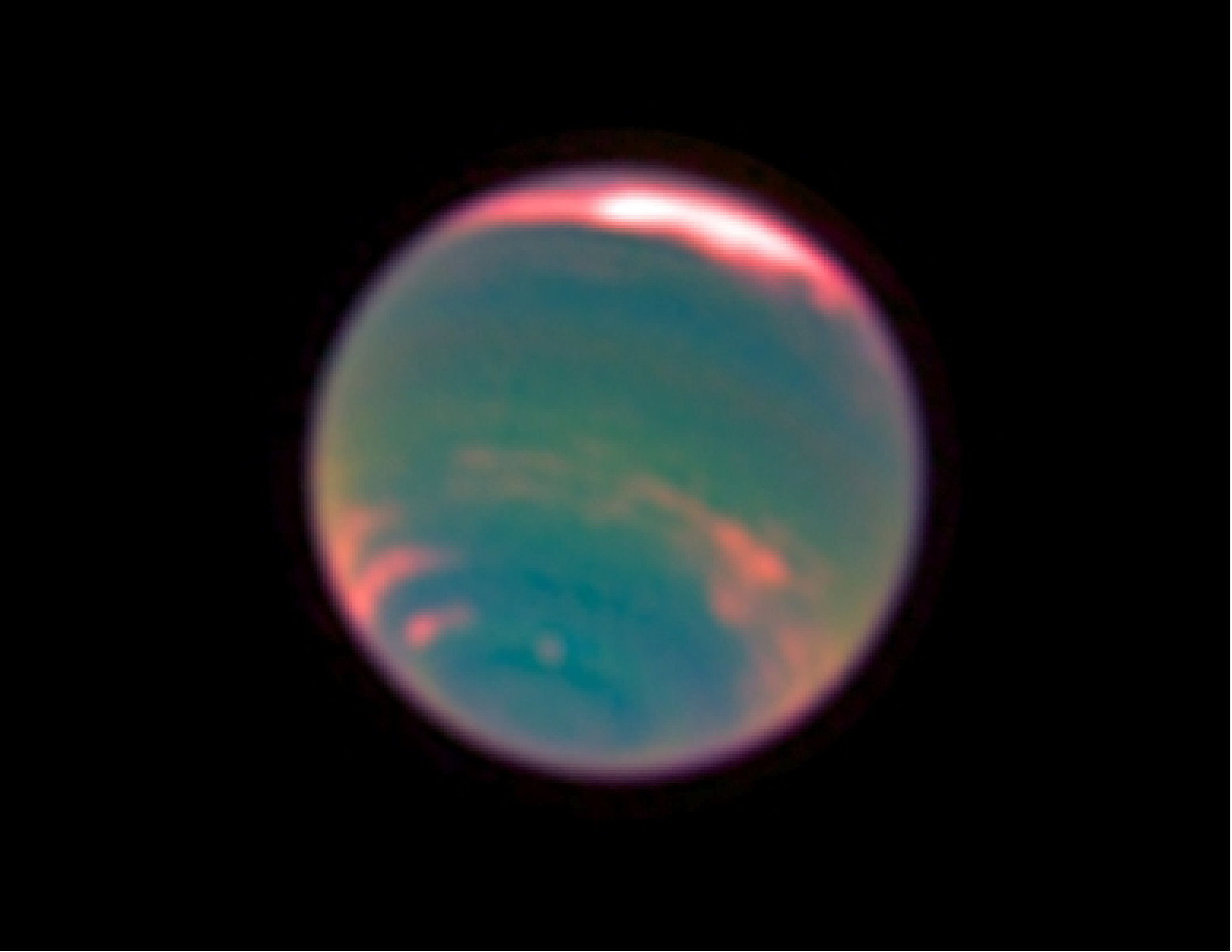
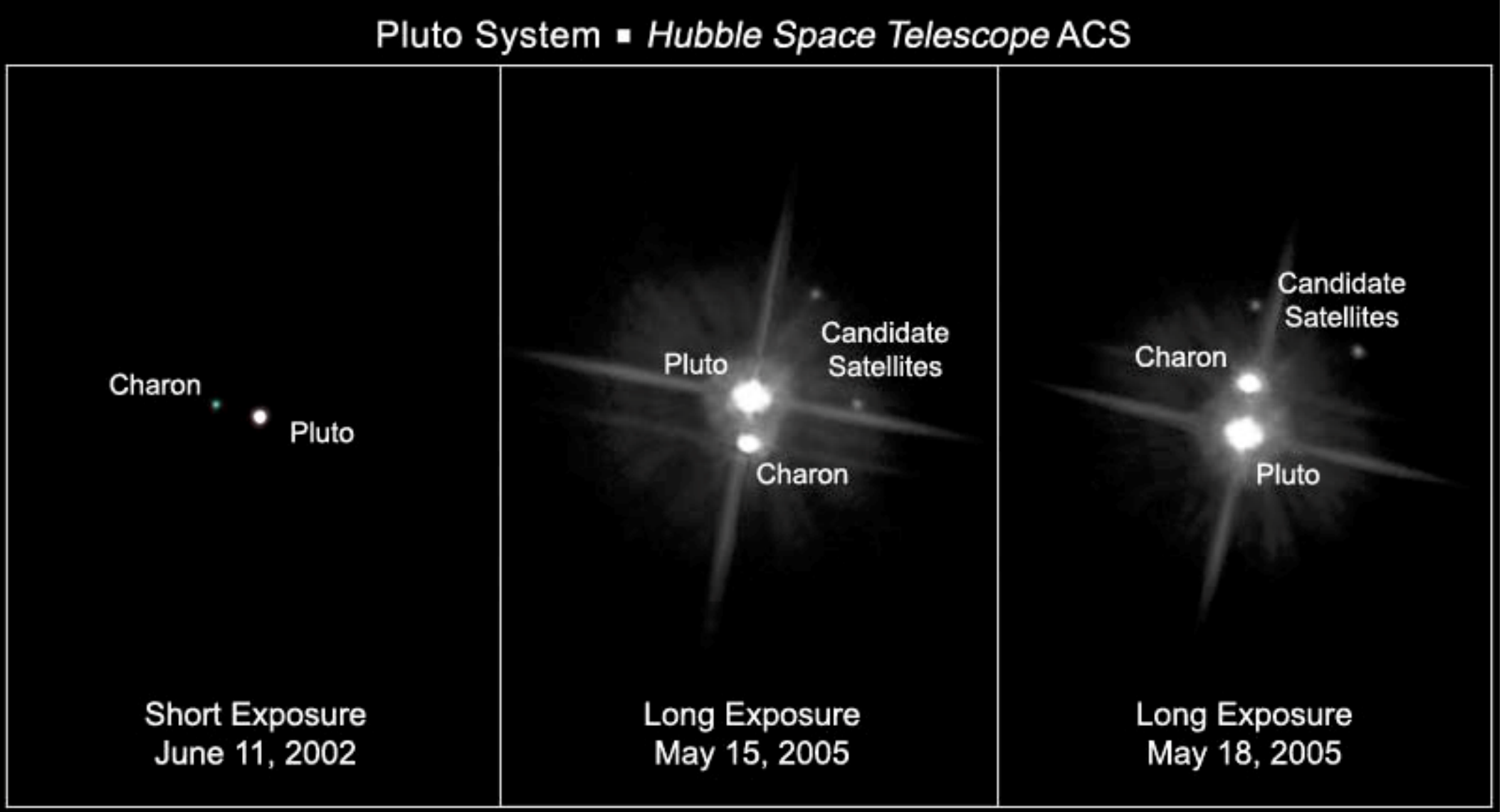


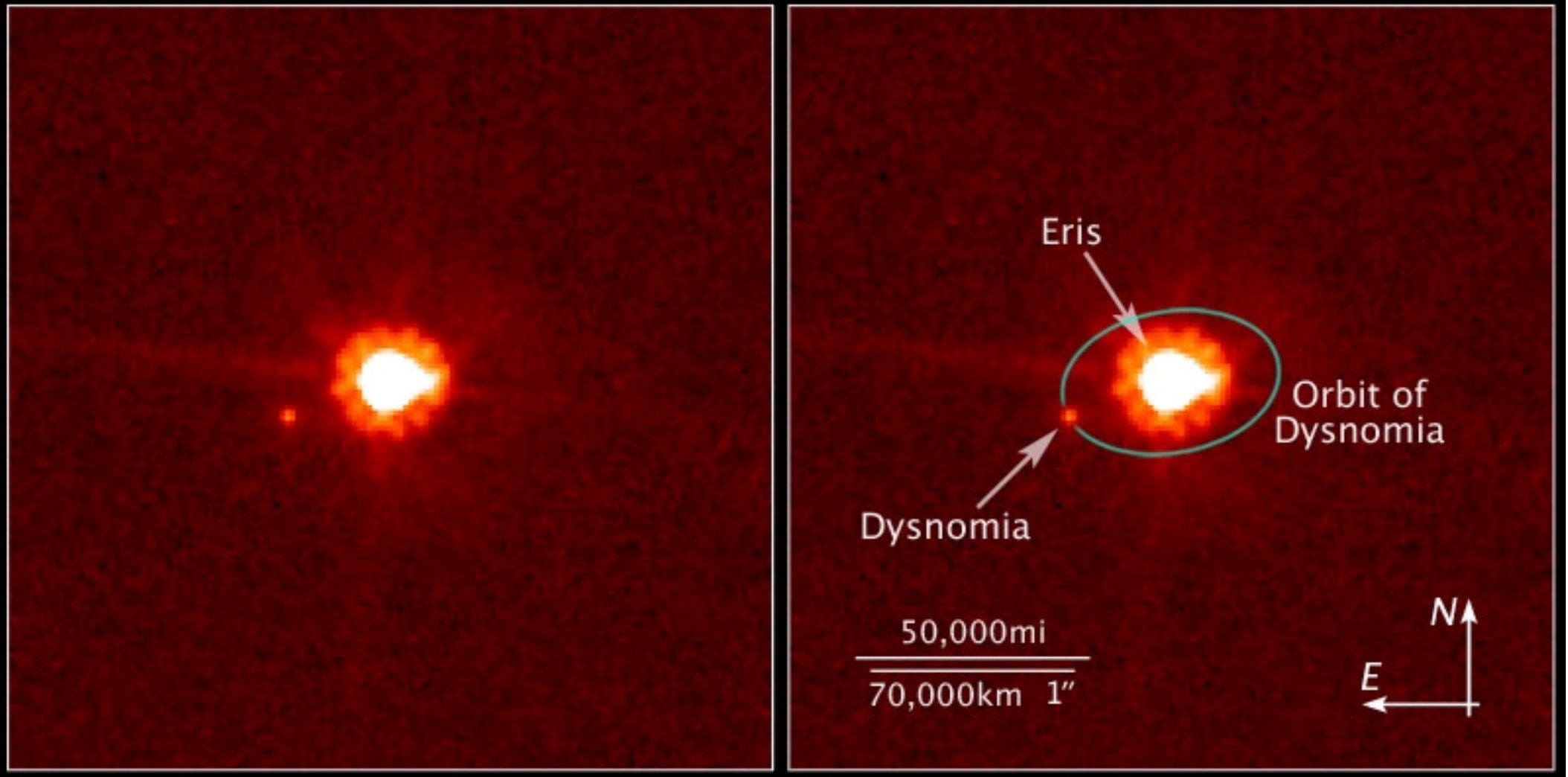






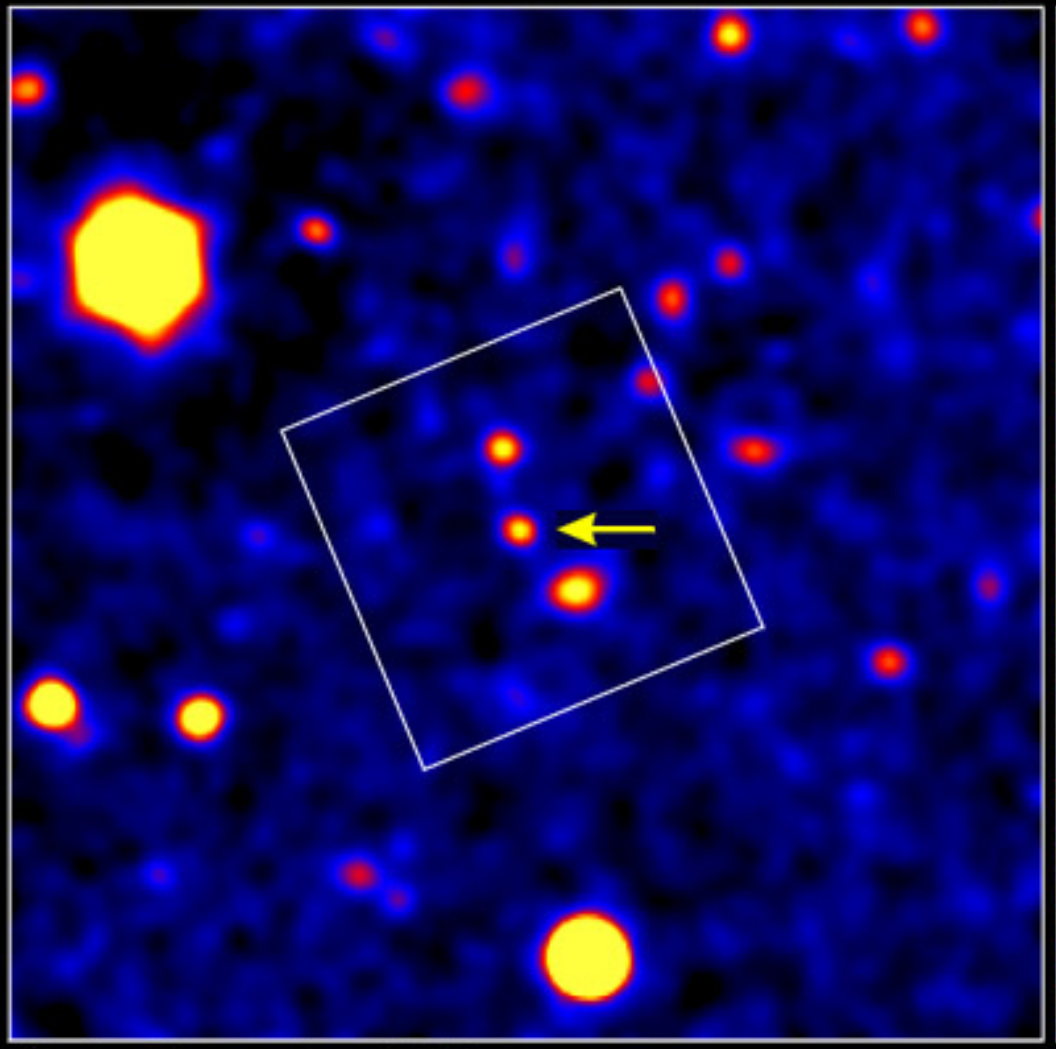
NASA, ESA, H. Weaver (JHU/APL), A. Stern (SwRI), and the HST Pluto Companion Search Team

Dwarf Planet Eris and Satellite Dysnomia • August 30, 2006 *HST* • ACS/HRC

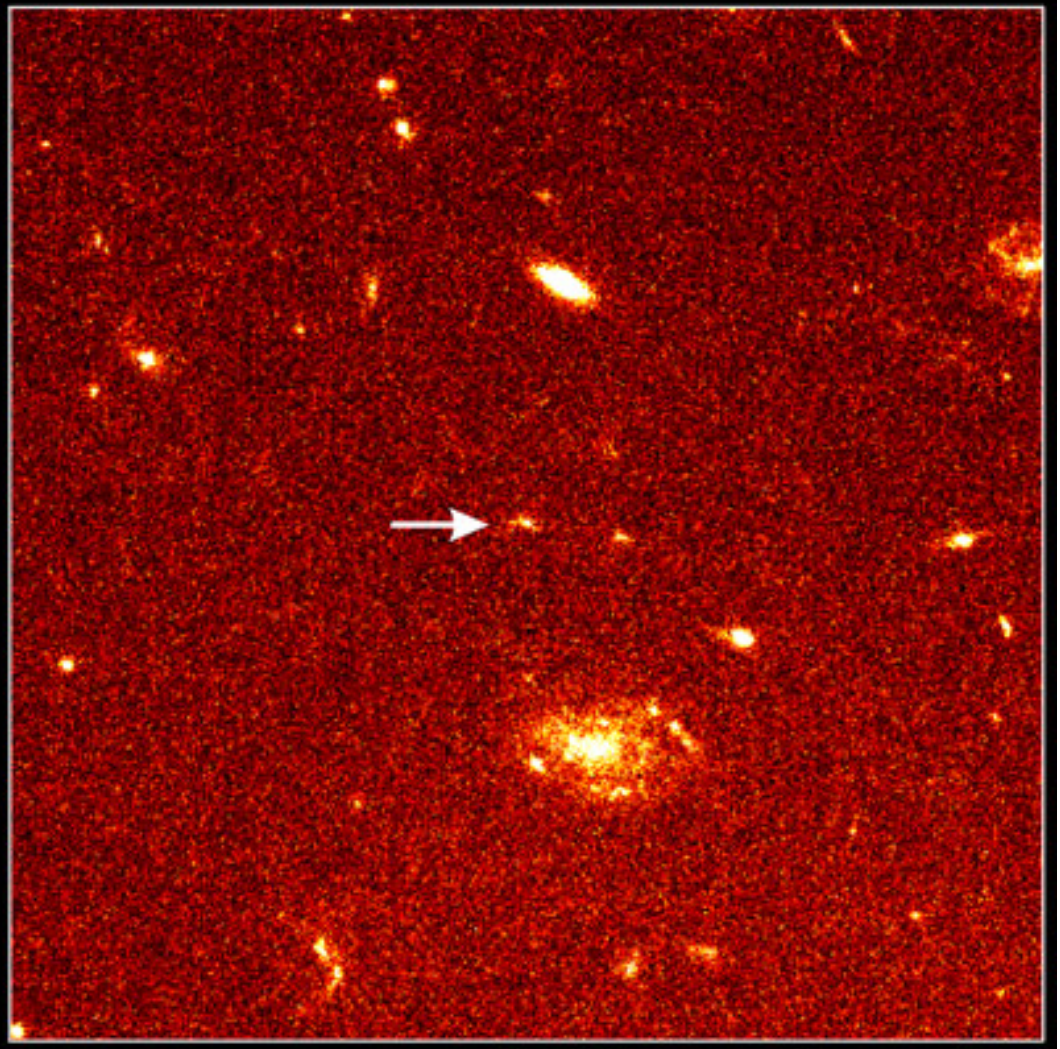


NASA, ESA, and M. Brown (California Institute of Technology) STScI-PRC07-24

Gamma Ray Burst 971214



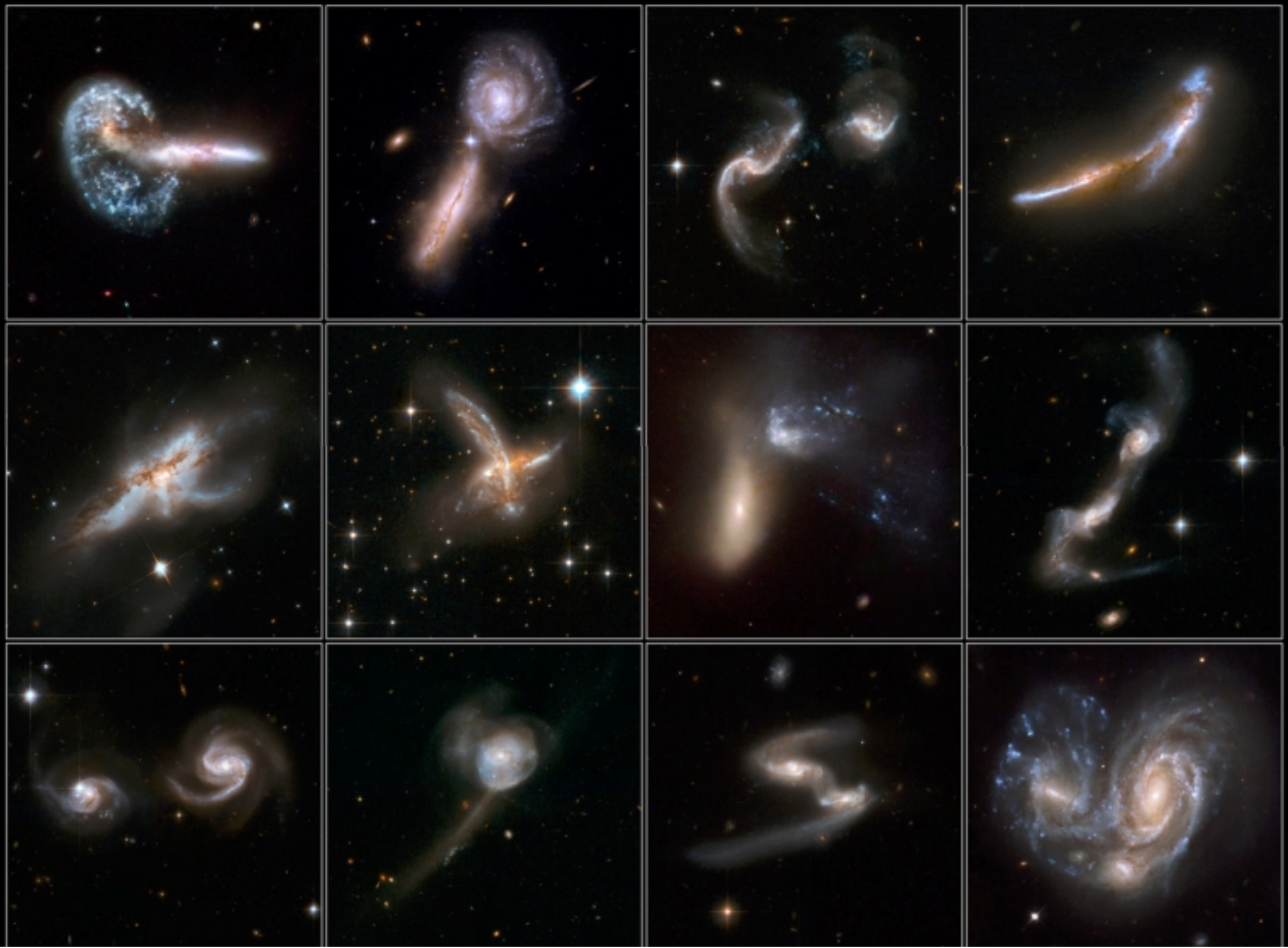
Keck • December 1997



HST/STIS • February 1998

PRC98-17c • May 7, 1998 • ST ScI OPO

S. G. Djorgovski and S. R. Kulkarni (Caltech), the Caltech GRB Team,
W. M. Keck Observatory and NASA

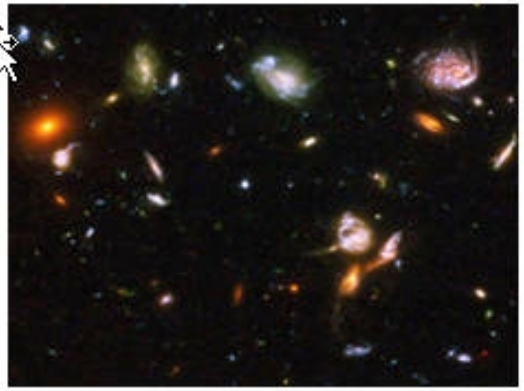

Interacting Galaxies
Hubble Space Telescope • ACS/WFC • WFPC2

Spiral Galaxy Pair NGC 3314

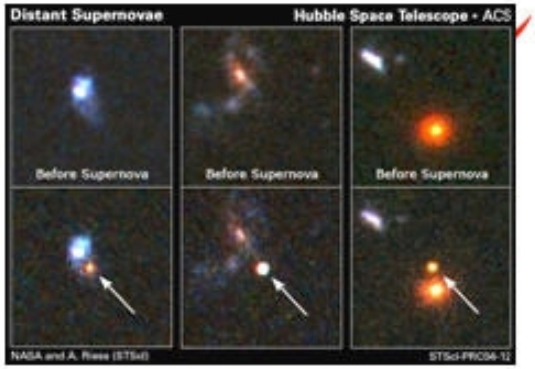
Hubble Heritage

PRC00-14 • Space Telescope Science Institute • NASA and The Hubble Heritage Team (STScI/AURA)

The 10 Most Heavily Cited Achievements of HST



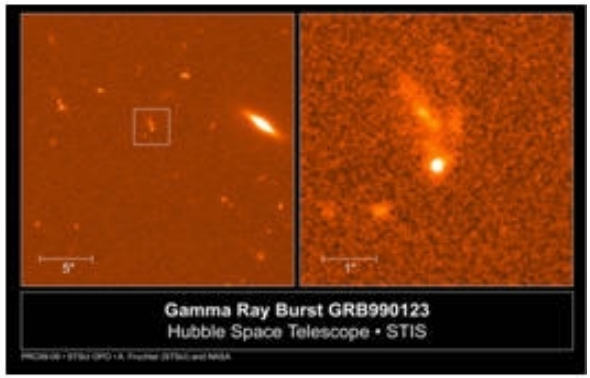
SM-1 and SM-2



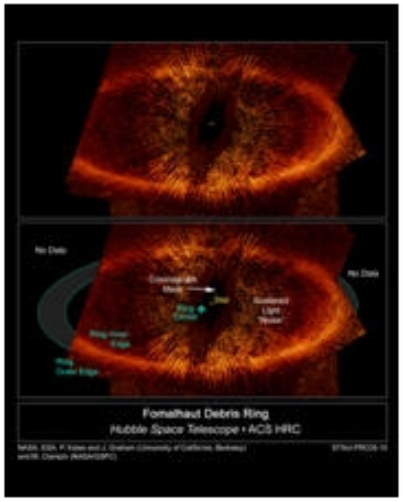
SM-1 and SM-3B

- anticipated
- unanticipated

- **Creation of galaxies (HDF, UDF)**
- **Acceleration of Universe: SN Ia**
- Distance scale of the Universe: H_0
- Giant black holes in galaxies
- Emission lines in active galaxies
- Intergalactic medium (QAL)
- Interstellar medium chemistry
- **Gamma Ray Burst sources**
- **Protoplanetary disks**
- **Extrasolar planets**

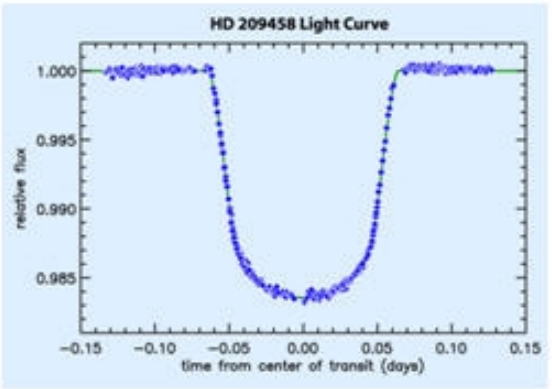


SM-1 and SM-2



SM-3B

Half of Hubble's highest-impact scientific achievements are in areas of research unanticipated prior to launch. Broadly capable flagship missions promote the element of surprise.



SM-3B